STRICKER

MANUAL

FOR POWER ASSIST DEVICES, HANDBIKES & STEMS

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This manual applies to the following models: Lipo Lomo Pico, Lipo Lomo Micro, Lipo Lomo, Micro GX, Lomo GX, Crossbike, Lipo Smart, Smart Wild, Smart Dynamic, all models of the City, Ultra, Lomo 360 series

STRICKER

Details of the manufacturer:

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1. Introduction and legal matters

We are delighted that you have decided in favour of a Stricker adaptation device. Thank you for your trust!

1.1. Notes

1.1.1. Reader note

1.1.1.1. Gender-equitable language

For various reasons, this document does not use exclusively gender-neutral wording. However, the content is aimed at people of all genders.

1.1.1.2. Visual impairments or cognitive impairments

We recommend that people with visual or cognitive impairments have this material read and explained to them by an assistant. All important documents can be found on our website.

www.stricker-handbikes.de

In addition, we offer videos and photos as additional resources to further improve accessibility and understanding.

If the instructions and information are not understood by the driver due to cognitive impairment, we strongly advise against using it.

1.1.1.3. Manufacturer's declaration on the availability of accessible instructions for use in easy and/or simple language

Due to the complexity of this manual and the subject matter, it is not possible to write the content in simple language. In such cases, we advise you to consult an assistant.

1.1.1.4. Deviating and simplified illustrations

Due to the high customisability of our adaptation devices and their model diversity, not all available configurations can be shown in detail. You will find various illustrations in this manual that may differ from your specific device.

These deviations can be seen, for example, in the arrangement of operating elements such as accelerator and brake levers, displays or buttons. There may also be differences in the equipment, such as modified frame parts, different display types, wheel sizes, different brake systems and much more.

Please note that many of the illustrations are simplified for the sake of visualisation.

1.1.1.5. Familiarisation with the adaptation device

Instruction on the adaptation device is provided by your dealer, an employee of your medical supply retailer, a sales representative or other employees of R & E Stricker Reha-Entwicklungen GmbH.

Recommendation

We recommend that you call in an assistant for instruction and commissioning. This person can support you in everyday use if required.

1.1.2. Dealer note

It is imperative that you hand this manual to every customer when handing over the adaptation device and expressly draw the customer's attention to the safety and hazard information.

Warning

Never deliver a product without a manual!

Note

Instruct customers in the use of the adaptation device using the manual.

1.1.3. Legal notice

Misprints, errors and price and product changes reserved. Product changes include, in particular, changes resulting from further development or changes due to legal requirements.

1.2. Supplementary insert

Your manual may contain supplementary inserts that have either been inserted directly into the manual or added to the scope of delivery. These inserts may provide additional information on your specific components or supplementary details to this manual. If such inserts are present, please note that the information they contain takes precedence over that in the manual.

1.3. Disclaimer

Please note that compliance with local laws and regulations is your responsibility. Our company accepts no liability for violations of these regulations.

Failure to follow the instructions in the manual could result in damage to the product and serious personal injury. We accept no liability for damage resulting from failure to observe the manual.

1.4. Purpose of the manual

This manual serves as a comprehensive guide for using the products of the manufacturer R & E Stricker Reha-Entwicklungen GmbH . It contains information on the functions, customisation options and solutions to frequently occurring problems. If you have any questions or problems, please do not hesitate to contact your dealer.

1.5. Glossary

Adaptation device, stem	Handbikes, Power assist devices, stem
Vehicle combination	Combination of adaptation device and wheelchair
Hexagon socket	Also known as Allen key

2. Conformity

The product supplied with this manual complies with the current EU standards and directives. We certify this in the EC Declaration of Conformity. If required, we will be happy to send you the corresponding declaration of conformity.

Our adaptation devices have been tested using an electromagnetic compatibility (EMC) test.

Information
Our full EC Declaration of Conformity can be found in the appendices of this manual, on request or on our website.

2.1. CE labelling

The CE marking is an important part of the declaration of conformity and ensures that this product complies with the applicable European regulations and safety standards. This marking indicates that the product has successfully undergone the necessary tests and assessments and therefore complies with European standards for safety, health and environmental protection.

2.2. EC Declaration of Conformity

We, R & E Stricker Reha-Entwicklungen GmbH, hereby declare that our wheelchair traction devices (hybrid and manual Handbikes and Power assist devices) comply with the essential requirements of the Medical Device Regulation (EU) 2017/745 (MDR) and the applicable Medical Devices Act.

The complete documentation on the manufacture and conformity of our products is available at R & E Stricker Reha-Entwicklungen GmbH. We assume sole responsibility for issuing this declaration of conformity.

Note
This declaration loses its validity in the event of a change not agreed with R & E Stricker Reha-Entwicklungen GmbH.

2.3. Legislation

Power assist devices from R & E Stricker Reha-Entwicklungen GmbH comply with the following technical standards:

- **ISO 7176-8** Requirements and test methods for static, impact and fatigue strength
- **ISO 7176-9** Climatic testing of electric wheelchairs
- **ISO 7176-14** Drive and control systems for electric wheelchairs and scooters

The manual and hybrid Handbikes from R & E Stricker Reha-Entwicklungen GmbH comply with the following technical standards:

- **ISO 7176-8** Requirements and test methods for static, impact and fatigue strength

3. Safety instructions and operating conditions

These instructions and application risks are for your own safety. Please read them carefully before using the adaptation device and pay particular attention to the safety instructions and hazard warnings!

3.1. Authorised speed

Always comply with the legal regulations of the country in which you are operating the adaptation device.

3.2. Authorised payload

The maximum load (rider:in and luggage) of the adaptation device is 120 kg as standard, unless otherwise specified. Please note, however, that the maximum load capacity of the wheelchair specified by the manufacturer may restrict this. In this case, the lower value applies as a guideline.

3.3. Transporting additional people

3.3.1. On the wheelchair, lap or adaptation device

Please refrain from carrying other people in the wheelchair, on your lap or on the adaptation device. There is a high risk of injury due to moving mechanics and greatly reduced control ability. There is also a risk of permanently damaging the adaptation device or the wheelchair.

3.3.2. On the trailer

Transporting other people on a suitable trailer attached to the wheelchair is only permitted on private property. Driving on the road or on cycle paths is prohibited. The accompanying person must be able to hold on securely and reliably with both hands. They must hold on to designated holding points such as the handles of the wheelchair. Not permitted holding points are, for example, shoulders, bags or backpacks.

Note
Ensure that your driving behaviour is adapted, especially on bends and around obstacles such as kerbs.

3.4. Security check

Carry out a safety check before every journey. This is primarily for your safety and the safety of all bystanders.

3.5. Recommended protective equipment

At speeds above 6 km/h, we recommend that you wear a suitable helmet.

3.6. **Recommended vehicle lighting and warning devices**

If you participate in public road traffic with a Power assist device or a Handbikes, you are obliged under the German Road Traffic Regulations (StVO) to use appropriately compliant vehicle lighting and warning devices. Irrespective of this obligation, we strongly recommend that you also observe these recommendations in all other situations.

3.6.1. **Vehicle lighting**

At least one headlight for white dipped beam and one white front reflector must be securely attached to the front of the adaptor.

You need a red rear light (tail light) and a red reflector on the back of the wheelchair.

Note

Power assist devices and Handbikes from Stricker are already equipped with approved lighting ex works. However, the wheelchair used with the adaptation device must be fitted with lighting by the user.

We also recommend that you attach additional reflectors to the wheelchair and the adaptation device as well as a bicycle flag to the rear of the wheelchair.

You can also attach a folding rear light bar with suitable lighting to the side of the adaptor. This provides you with additional protection from other road users. This lighting device can be easily retrofitted.

Note

Always have new replacement batteries available for lighting powered by button cells or batteries.

3.6.2. **Warnings**

Power assist devices requiring road authorisation, i.e. Power assist devices with a maximum speed of more than 6 km/h and which are operated on publicly accessible terrain, must use a large warning triangle. This warning triangle must be clearly visible at the rear of the wheelchair and be easily recognisable to rear traffic.

For vehicle combinations that do not require a road licence, we offer a smaller version of the warning triangle in our range. Please note, however, that this variant is not suitable for road authorisation.

Information

All required or recommended warning devices can be found in our range of accessories.

3.7. **Nature of the wheelchair**

The adaptation device can be fitted to various wheelchair models, provided that the wheelchair is in perfect technical condition.

Wheelchairs with rigid frames are particularly suitable, as they offer increased stability when using an adaptation device. Nevertheless, most folding wheelchairs are also suitable for use in combination with our products.

If you have any questions about your current wheelchair model or are considering purchasing a new one, please do not hesitate to contact us. We will be happy to help you.

Note

Refrain from using the wheelchair if the frame has already undergone major repairs or if there is visible and serious damage.

Information

With an adaptation device on the wheelchair, you can continue to move the wheelchair as normal by propelling the wheels on the wheelchair. This allows you to drive forwards and backwards without restriction. However, steering by moving the wheelchair wheels is only possible to a limited extent due to the automatic steering return.

3.8. **Environments with other electrical devices**

Please refrain from driving in the vicinity of strong electrical interference fields. These could affect the performance characteristics of the product, e.g. flickering display or reduced motor power. The Handbikes or Power assist devices can influence electronic magnetic fields from other devices or equipment, such as anti-theft barriers in shops.

3.9. **Modifications and conversions**

Any modifications to your adaptation device, especially to critical components such as the frame or the electronics, are not permitted.

4. **Intended use and product description**

4.1. **Intended use (intended purpose and locations)**

Coupling a Stricker adaptation device to the wheelchair creates a three-wheeled vehicle. The wheelchair as such is not modified and its properties are fully retained (the wheelchair can be retrofitted). The driver can connect and disconnect the adaptation device to and from the wheelchair independently and without tools.

The adaptation device extends the radius of action by allowing longer distances to be travelled easily and independently. The two castors of the wheelchair are raised during travel and have no further influence on the driving behaviour. This improves some driving characteristics. Obstacles such as kerbs and uneven surfaces such as cobblestones or gravel paths can be overcome easily.

Handbikes and Power assist devices as well as stems with a braking system enable safer descents, even over long distances and steep gradients. They also have a splash guard.

Adaptive devices with drive systems such as Handbikes and Power assist devices make travelling uphill easier.

Information

With a Handbikes or Power assist device fitted, you can still move your wheelchair forwards and backwards using the rear wheels (pushing option). Please note, however, that the automatic steering return may restrict steering with the wheelchair wheels.

4.2. Re-use

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 specialist medical supply retailer. Your Handbikes or Power assist devices can then be easily and economically reused.

The Power assist devices must be serviced and disinfected before each re-use. All surfaces of the Handbikes or Power assist devices are resistant to disinfectants. All surfaces of the Power assist device must be thoroughly wiped and spray-disinfected before reuse.

Use an alcohol-based liquid disinfectant that is suitable for medical products and devices. Please follow the manufacturer's instructions for use for the disinfectant you are using.

4.3. Features and functions

Feature	Description of the
Braking distance in cm	at 6 km/h: 80, at 15 km/h: 140, at 25 km/h: 330
Maximum recommended gradient	6 ° / 10 %
Maximum cross slope	0.05
Turning radius (with Sopur Easy 200) in cm	180
Intended service life/continuous load capacity	Frame: 10 years, electronics and motor: 5 years, wearing parts: According to wear
Limiting the maximum speed	The maximum speed of 6 km/h prescribed by the statutory health insurance companies can only be changed at Stricker using special manufacturer software and data cables
Engine noise level at 15 km/h in dB	up to 65 (reference volume without motor: 50

4.3.1. Power assist devices

Power assist devices have a purely electric drive. They cannot be operated manually. They can therefore also be used by people with severely limited motor skills or other physical abilities.

The maximum speed varies depending on the model and customer requirements. A road licence is required in Germany for use on non-private property and at speeds above 6 km/h.

If the motor assistance fails, the vehicle combination can still be propelled via the handrims of the wheelchair, albeit with increased rolling resistance.

4.3.2. Handbikes

Handbikes come in two main variants: manual and hybrid. Manual Handbikes are powered solely by a crank movement by hand, while hybrid Handbikes also offer electric assistance.

Handbikes, like bicycles, do not have a fixed maximum speed. However, there is a limit for electric assistance for hybrid Handbikes in Germany. Starting off with a thumb throttle without moving the cranks yourself is limited to 6 km/h. If the cranks are moved, the Handbikes can provide assistance up to a speed of 25 km/h. Speeds in excess of this can only be achieved by the rider's own efforts.

If the motor assistance fails, the hybrid Handbikes with increased rolling resistance can still be powered.

4.3.3. Driveless stems

Driveless stems have different characteristics depending on the equipment. They generally improve riding characteristics, especially on uneven or non-asphalted surfaces such as gravel paths and cobblestones.

Some stems have a braking system and an optional steering function.

4.4. Technical specifications and dimensions

The technical specifications can be found in the appendices of this manual or on our website.

4.5. Optional equipment and accessories

Our range is characterised by a large selection of optional equipment and accessories. The aim is to provide the driver with optimum support and to fulfil all applications.

The optional equipment can have an influence on the driving behaviour.

4.6. Indication and contraindication

4.6.1. Indication

This product is suitable for people with:

- Neuromuscular diseases such as cerebral palsy and muscular dystrophy
- Restricted movement, for example due to paraplegia, spasticity, amputations, coordination difficulties or walking disabilities

4.6.2. Contraindication

The product is not suitable for people with:

- Visual disturbances
- epileptic diseases
- pronounced coordination disorders of the hands and arms
- cognitive impairments

which make proper and safe use in everyday life and in public impossible.

4.7. Identification and symbols

4.7.1. Type plate

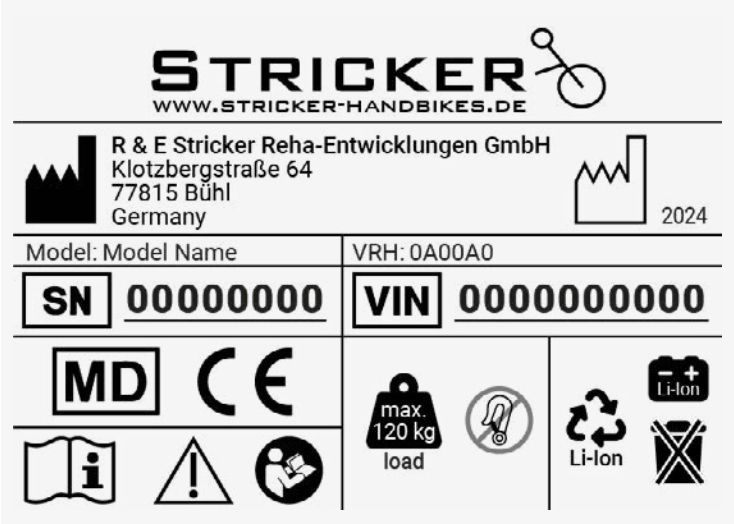


Abb. 1: Example of a type plate

The type plate on your product contains essential information such as the model designation, year of manufacture and serial number as well as other specific information. You will find the type plate near the head tube. It is important that the type plate is not wilfully damaged or removed.

Note

The actual rating plate of your product may differ from the example illustration shown.

4.7.2. Symbols

Symbol	Meaning
	Details of the manufacturer
	Year of manufacture
max. 120 kg user weight	Maximum weight of the rider (user weight)
	The combination of Handbikes or Power assist devices with a wheelchair may not be used as a seat in a motor vehicle.
	Observe the warnings in the manual
	Read manual
MD	The device is a medical device
CE	The device is CE-compliant
Li-Ion	Lithium-ion battery included
Li-Ion	Recycle lithium-ion battery separately
	Do not dispose of battery in household waste

4.8. Materials used

The following section describes the materials used for the Power assist device or Handbikes, with details of how to dispose of or recycle the device and packaging. In addition, special local regulations regarding disposal or recycling may apply; these must be observed when disposing of your Power assist device or Handbikes. (This may include cleaning or decontaminating the Power assist device or Handbikes prior to disposal).

Material	Utilisation
Aluminium	Tubes, covers, rim, handlebars Resistance: high; Flammability: low; Corrosion-protected materials
Steel	Screws, frame Resistance: high; Flammability: low; Corrosion-protected materials
Stainless steel	Screws, spokes Resistance: high; Flammability: low; Corrosion-protected materials
Plastic	Handles, plug, display, charger, housing, twist throttle, thumb throttle, rim tape Resistance: high; Flammability: low
Rubber	Tyres, inner tube Resistance high, flammability: low
Packaging	Made from cardboard Resistance: medium; Flammability: high
Battery	Lithium-ion battery (hazardous goods) Resistance: high; Flammability: low

4.9. Disposal and recycling

Electrical appliances, batteries, accessories and packaging should be recycled in an environmentally friendly manner. Do not dispose of the batteries, chargers and electrical

components of your adaptive device in household waste. In accordance with current EU directives, electrical appliances and rechargeable batteries must be collected separately and recycled in an environmentally friendly manner. Dispose of all other components of your adaptive device in accordance with the regulations in your region at suitable collection points or in household waste paper, cardboard and plastic packaging.

5. Unpacking and cancelling transport settings

Unpacking and installation video

www.stricker.bike/installation

You can find an unpacking and installation video on our website. These explain the necessary steps individually and clearly.

5.1. Recommended tools and aids

The scope of delivery includes a 6 mm Allen key for adjusting the frame of the adaptation device on the wheelchair. If required, the 4 mm size is also supplied, which is used specifically for adapting the handlebars.

Subject of the audit	Tools and aids
Power assist devices only	
Folding handlebars	4 mm hexagon socket
Angle settings on the handlebars	5 mm hexagon socket
Rotation of the clamp on the Pico frame	5 mm hexagon socket
Handbikes only	
Crank handle	8 mm hexagon socket x mm Open-end spanner
All models	
Frame adjustment	6 mm hexagon socket x mm Open-end spanner
Phillips screwdriver	Position clamps
Disc brakes	2 mm and 5 mm hexagon socket

Recommendation

We recommend using a ratchet, also known as a reversible ratchet, with a torque spanner and suitable socket spanners. Use the specified torque to tighten the screws.

5.2. Check scope of delivery

Check the scope of delivery using the enclosed packing slip. Additional weights, batteries, chargers and other accessories are either in the same box as the adaptor or are shipped separately.

The following is generally included: At least 1 battery with at least 1 battery charger (depending on equipment and only for electrical devices), manual, quality certificate, position clamps, 6 mm Allen key, rear lights for wheelchair and, if necessary, adapter for attachment to wheelchair

5.3. Unpacking

The adaptation device is secured in the box during transport. Please cut the safety ropes before unpacking it.

Recommendation

For this step, we recommend having a second person help you to remove the appliance from the box together.

5.4. Undoing transport settings

5.4.1. Rahmen

If the adaptation device is equipped with an extra wide frame, a complete side arm has been removed for transport.

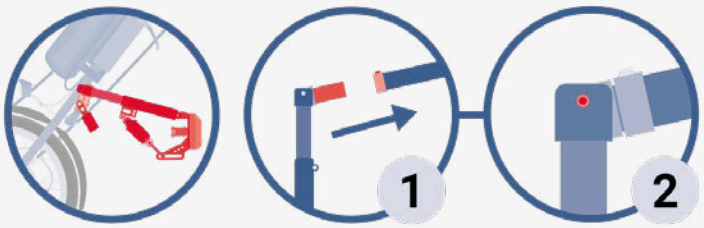


Abb. 2: Insert frame

You can fix this in the correct position (1) and tighten the screw provided (S1L or S1R) to the correct torque (2).

5.4.2. Mounting stand

Abb. 3: Locking the attachment stand

The attachment stands are separated from the adaptation device for transport. These can now be inserted (1 and 2 in the illustration). Ensure that they engage correctly and can no longer be pulled out.

5.4.3. **Handlebars (Power assist devices)**

Depending on the model and equipment, the handlebars are removed or converted for transport.

5.4.3.1. **Folding handlebars**

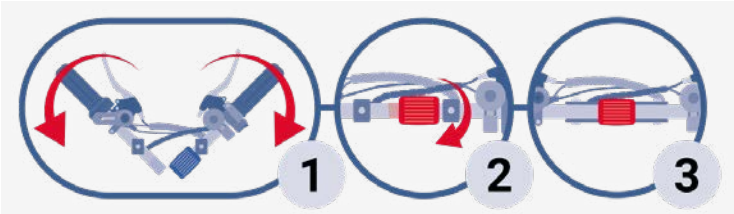


Abb. 4: Folding handlebars - Lipo Lomo Pico

Folding handlebars are folded together for transport. The two halves are joined together using a central screw connection. To secure them, first straighten the handlebars (1) and then tighten the screw sleeve (2) as far as it will go (3).

5.4.3.2. **Standard handlebars**

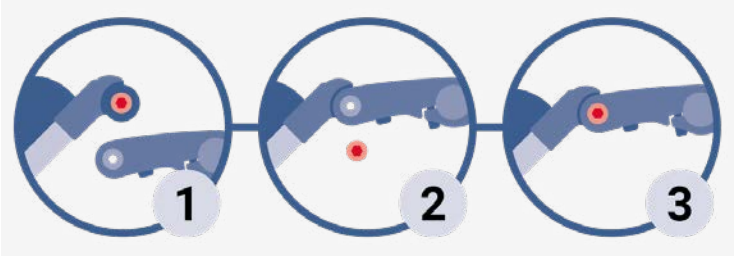


Abb. 5: Fixed handlebars - Crossbike, Lipo Lomo, Lipo Lomo Micro

Standard handlebars are detached from the steering tube together with the handlebar adapter for transport. To mount, the handlebars are positioned at the desired location and the screw in the thread of the handlebar adapter (1) is loosened. The handlebar adapter can then be positioned (2) and the screw tightened again (3) to securely fasten the handlebars.

5.4.4. **Cranks (Handbikes)**

Sometimes a crank (left or right) has to be removed for transport. The crank is then normally secured to the frame or the bike for transport. Please release this securing device

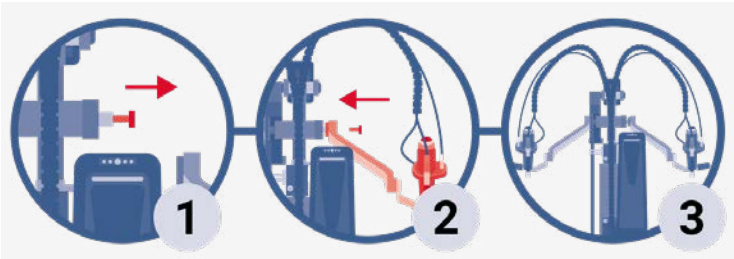


Abb. 6: Fitting the crank

To attach the cranks to the bottom bracket, first unscrew the bolts from the bottom bracket (1), then insert the cranks and then secure them again with the bolts in the bottom bracket (2). Make sure that the cranks are aligned in the same way as the bike (3).

5.4.4.1. **Additional crank with back-pedalling equipment**

In some situations it is necessary to remove the crank with parts of the back-pedalling equipment. This requires an additional assembly step.

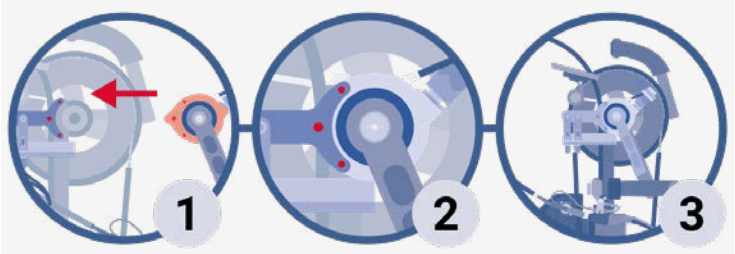


Abb. 7: Connect crank with coaster gear

First remove the three screws on the back-pedalling equipment that connects the crank to the Bowden cables. Then insert the crank as in the previous step (1), taking care to insert the crank so that the holes in the screw connection are aligned (2). Insert all three screws in the correct position and tighten them hand-tight. Check that the coaster brake works and does not wobble.

5.4.5. **Chin shift (Handbikes)**

Our Handbikes with Tetra equipment are equipped with a chin lock. This is detached for transport together with the handlebar and attached to the frame. First loosen the attachment.

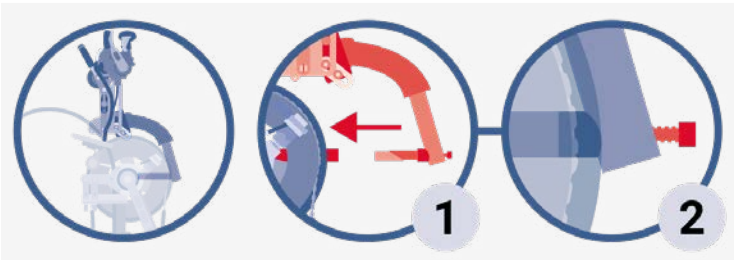


Abb. 8: Fitting the crank with coaster brake

To fit the grab rail with chin switch to your Handbikes, first loosen the screw on the grab rail (2). Then insert the grab rail into the lower tube attached to the Handbikes (1). Ensure that the grab rail is aligned straight and then tighten the screw (2). Make sure that the grab rail is so tight that it does not twist or come loose when lifting and operating the Handbike.

5.4.6. **Battery**

Depending on the model, the batteries are either plugged in from the side or from above. Always use the battery spanner to securely fasten the battery in the lock.

5.4.7. **Weights**

The weights are hooked into the KLICKfix bracket on the wheel. Make sure that the bracket clicks into place and that the weights cannot come loose by themselves.

6. Installation and adaptation

In den folgenden Kapitel wird die Zusammenbau- und Montageanweisung beschrieben.

Unpacking and installation video

www.stricker.bike/installation

You can find an unpacking and installation video on our website. These explain the necessary steps individually and clearly.

Note

Ensure that all screws have been tightened to the torque specified for the screw once the adjustment has been completed. Check each screw if necessary.

Warning

Nicht richtig angezogene Schrauben stellen ein erhebliches Sicherheitsrisiko dar und können zu schweren Unfällen und Verletzungen führen! Beachten Sie immer in den Anhängen zu findende Drehmomentliste.

6.1. General designations

6.1.1. Standard frame

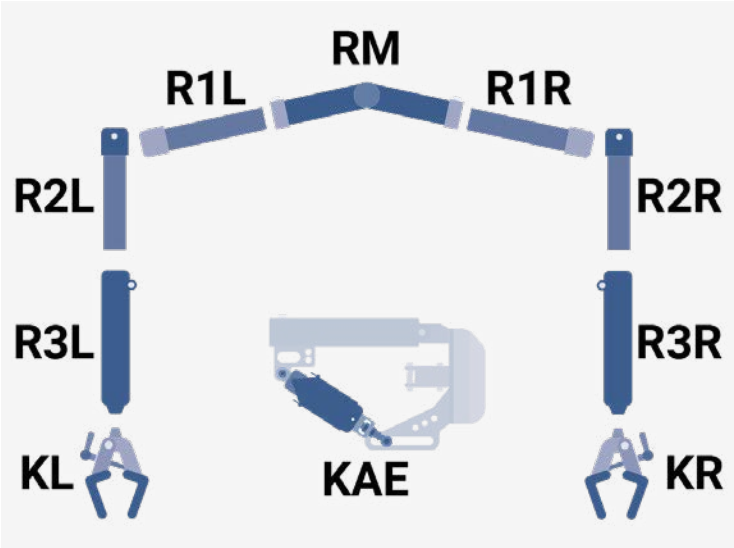


Abb. 9: Designations of frame parts and clamp

Designation	Naming and impact
RM	Steering bearing tube
R1L (links)	Aluminium frame angle: Available in different lengths. Determines the angle.
R1R (right)	
R2L (links)	Sliding tube: Available in different lengths. Determines the distance.
R2R (right)	
R3L (links)	Longitudinal tube: Determines the rotation of the clamps
R3R (right)	
KL (links)	Clamps and clamping jaws: Enables connection to the wheelchair.
KR (Right)	
KAE	Automatic adjustment: Determines the height of the castors in the travelling position and enables them to be raised.

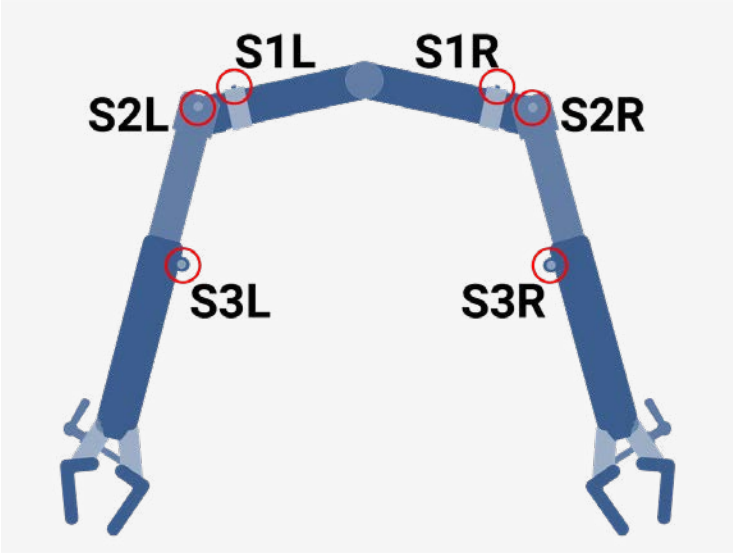


Abb. 10: Frame screw designations

Designation	Impact
S1L (links)	Determines the angle of the adaptation device For Handbikes: Handlebar height
S1R (right)	
S2L (links)	Determines the frame width
S2R (right)	
S3L (links)	Determines the distance of the adaptation device and the rotation of the clamps
S3R (right)	

6.1.2. **Frame with centre louvre (Pico frame)**

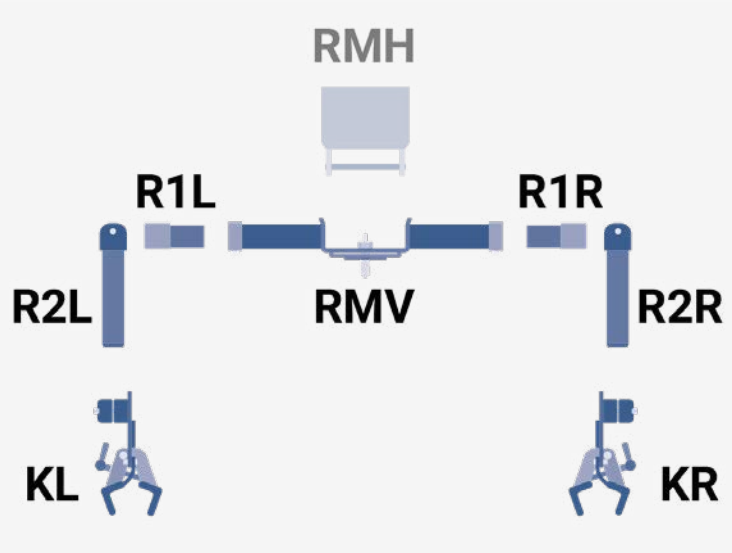


Abb. 11: Designations of frame parts and clamp

Designation	Naming and impact
RMV	Front centre louvre: Part of the adaptation device
RMH	Rear centre louvre: Part of the frame Enables lifting
R1 (links)	Aluminium frame angle: Available in different lengths. Determines the angle.
R1 (right)	
R2 (links)	Sliding tube: Available in different lengths. Determines the distance.
R2 (right)	
K (links)	Clamps and clamping jaws: Enables connection to the wheelchair.
K (right)	

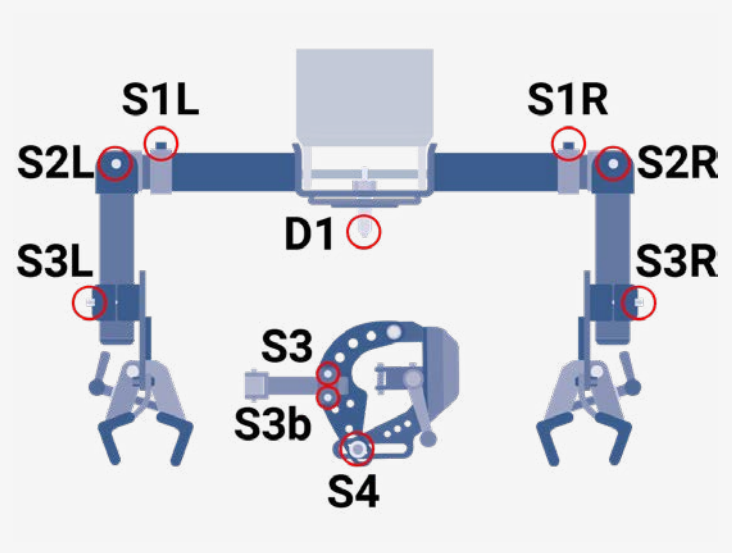


Abb. 12: Frame screw designations

Designation	Impact
D1	Holds the frame in position and enables lifting
S1Links	Determines the angle and distance of the adaptation device
S1Right	
S2Links	Determines the frame width
S2Right	
S3Links	Determines the rotation of the clamps
S3Right	
S3b	Part of the bracket with S3
S4	Determines the angle of the clamps

6.2. **Requirements for the wheelchair**

In principle, the adaptation devices from the manufacturer R & E Stricker Reha-Entwicklungen GmbH can be fitted to most common wheelchairs.

6.2.1. **Folding wheelchair**

Adaptation to folding wheelchairs is possible.

6.2.2. **Foldaway or removable footrests**

Wheelchairs with swivelling or removable footrests may require an additional adapter.

6.2.3. **Wheelchair with carbon frame**

Wheelchairs with a carbon frame (no carbon look) are not suitable for use with adaptation devices.

6.2.4. **Further requirements for the wheelchair**

6.2.4.1. **Pipe diameter**

If the pipe diameter is less than 23 cm, an additional adapter may be required.

6.2.4.2. **Seat and track width**

If the seat width is less than 30 cm, the track width is often not sufficient for operation as a tricycle. This is particularly important if you plan to travel faster than 6 km/h.

This can be solved by equipping the wheelchair with a track widener or a wheel camber.

The track width has a direct effect on the lateral tipping behaviour of the vehicle combination.

6.2.4.3. **Armrest**

Make sure that the armrest does not collide with the controls or the cranks.

6.2.4.4. **Frame**

The frame part to which the adaptation device is attached must have a stable connection to the axle of the wheelchair.

6.2.4.5. **Electric wheelchair**

The use of adaptation devices with electric wheelchairs is not possible.

6.2.5. **Measures in individual cases**

If you are unsure whether an adaptation to your wheelchair is possible, you can contact your dealer or the manufacturer R & E Stricker Reha-Entwicklungen GmbH.

6.3. **Mounting position on the wheelchair**

Abb. 13: Example: Possible mounting positions

To optimise the connection between the clamp and the wheelchair, a large area of the frame must be supported. This area of the frame must be stable.

For foldable footrests or folding wheelchairs where the frame surface is not sufficiently strong, suitable adapters from our range can be used to increase stability.

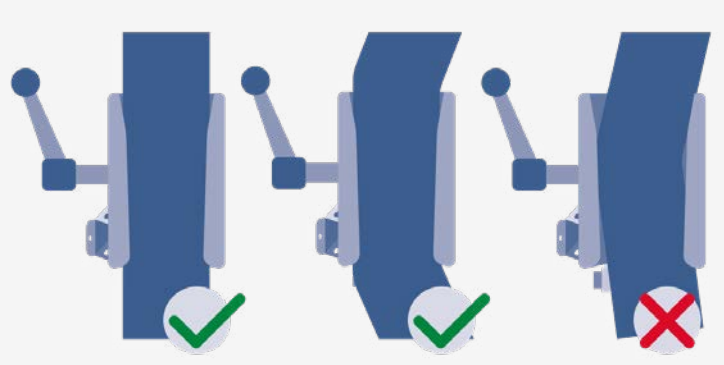


Abb. 14: Positive and negative example of the clamp connection

The clamps of the adaptation device must rest on a straight tube of the wheelchair frame to maximise the contact surface so that the clamping jaws enclose the tubes. It is important that they are not fixed at an angle.

Note

The plastic caps of the clamp must rest directly on the metal of the wheelchair frame. No materials such as calf straps or foot straps may be clamped in between.

If the angle of the frame of your wheelchair makes it difficult to adapt, we offer adapters that enable additional attachment options.

6.3.1. **Available adapters**

6.3.1.1. **Adapter for removable or swivelling footrests**

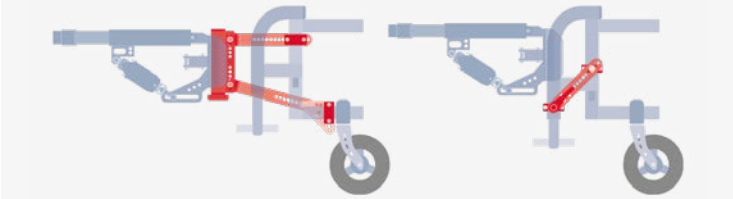


Abb. 15: General adapter and stem fix

On wheelchairs with removable or swivelling footrests, the frame may be less stable in the area of the footrests. An increased load in this area can lead to frame damage and, in the worst case, to frame fractures that could result in serious injuries.

To prevent such risks and ensure safe installation of our adaptation devices, we offer specialised adapters, the Vorbaufix and the Generaladapter.

These adapters reinforce the frame at potentially critical points, providing a robust attachment point for our devices. This not only prevents potential damage, but also enables a safe and undisturbed riding experience. The use of our adapters is highly recommended when fitting adaptation devices to wheelchairs with removable footrests.

6.3.1.2. **General adapter**

The general adapter is highly customisable thanks to its many adjustment options. It is fitted to the appropriate points on the rigid frame of the wheelchair.

The general adapter is used if there is no other suitable place to mount the adaptation device or the alternative stem fix.

The adaptation device is then aligned and mounted on this adapter.

Detailed installation instructions are included with the general adapter or are available on our website.

6.3.1.3. **Stem fix**

The front attachment is mounted on the fixed part of the wheelchair frame and on the swivelling or removable frame.

It transfers the forces generated during the ride to the starting part of the frame.

Thanks to the quick-release screw, the stem fix can be separated from the swivelling or removable part of the frame in a single movement, so that the function of the frame is retained.

Detailed installation instructions are included with the Vorbaufix or are available on our website.

6.3.1.4. **Other adapters**

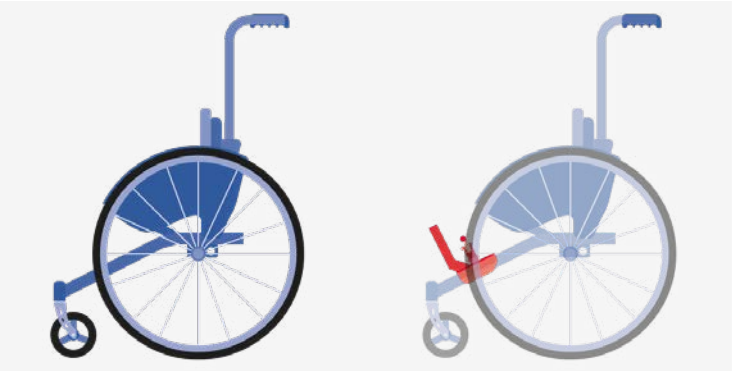


Abb. 16: Example of extended adaptation

If there is no suitable place on the frame to attach the adapter directly, other adapters from our range can be used. We will be happy to help you.

6.3.1.5. **Adapter from wheelchair manufacturer**

In rare cases, wheelchair manufacturers themselves offer suitable adapters. In this case, use the information provided by the wheelchair manufacturer and follow their instructions.

6.4. Customise settings

The following settings must be made symmetrically (on both sides). To simplify matters, however, we may only show the adjustment on one side. Once the adjustment has been completed, both sides must be set absolutely identically.

It is advisable to check the settings made for the driver during the adaptations. This is carried out by the adaptation on the wheelchair and with the driver in the wheelchair.

Note

Make sure that you always adjust the frame on a level surface if possible. This is the only way to achieve the best result.

Only carry out any adjustments when the wheelchair is parked (castor wheels of the wheelchair are in contact with the ground) and with the wheelchair brakes applied.

Ensure a safe environment during the fitting.

Warning

If adjustments are made in the travelling position (castors raised), there is a risk of injury!

6.4.1. Frame width

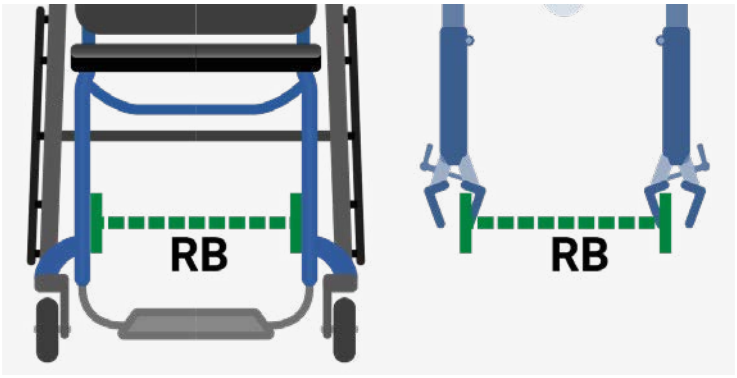


Abb. 17: Adjust frame width

First adjust the frame width (RB) of the adaptation device to the frame width of the part of your wheelchair to be adapted.

To do this, loosen the SR2 and SL2 screws.

Warning

Do not change the frame width by pulling out the aluminium frame brackets or loosening the S1R and S1L screws, as the aluminium frame brackets must always remain completely in the headset tube.

6.4.2. Customise standard frame

To adjust the frame, you can adjust the clamps to the wheelchair so that they can be attached to the frame of the wheelchair. For this step, open or deactivate the automatic adjustment grid.

Information

We recommend that you initially only loosely fasten the clamps during installation so that the adaptation device is held securely but the clamps can still be moved. This will make the entire fitting process easier.

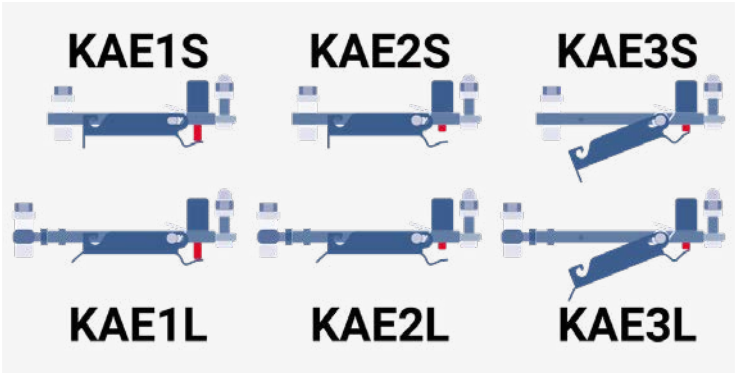


Abb. 18: States of the automatic grid

Designation	Feature
KAE1Small	Activated / closed and engaged (jacked-up state, swivel castors are raised)
KAE1Large	
KAE2Small	Activated / closed (not ready to drive!)
KAE2Large	

KAE3Small **KAE3Large**	Deactivated / open (castors still on the floor)

Warning

Only drive off when the automatic latches have engaged on both sides. This can be seen when the bolt is fully extended and touches the tongue of the automatic latch.

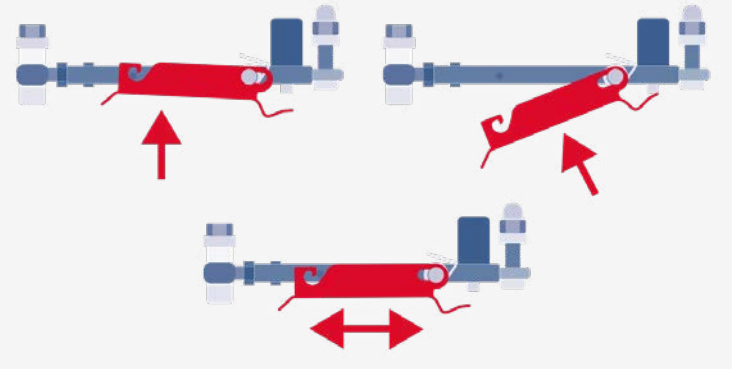


Abb. 19: Open and close automatic louvre

The automatic latch is first pressed in and then pushed to the left or right to close or open it.

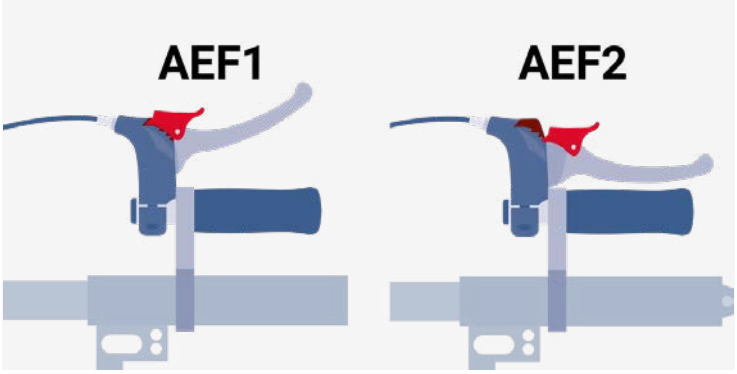


Abb. 20: Automatic single-grid with remote release

As an optional extra, we also offer the automatic louvre with a remote release. In this case, the automatic latch is not opened and closed by pressing and sliding the tongue, but by operating a lever on the frame. Position AEF1 shows the open state, while AEF2 shows the closed state of the clamp.

Ensure that the lever is fully pressed in to close. To open the automatic latching mechanism, first press the lever and then release the locking mechanism.

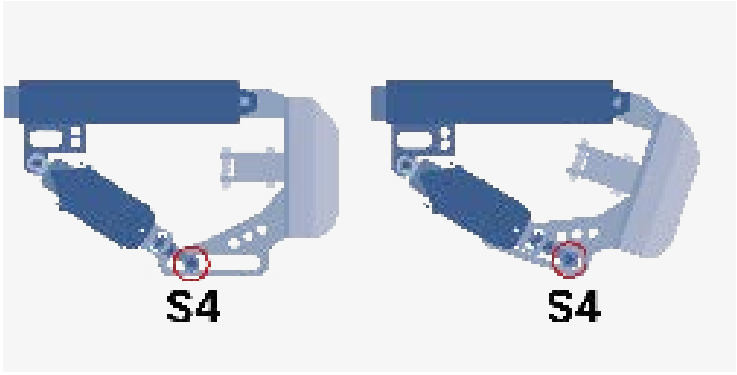


Abb. 21: Adjust the angle of inclination of the clamp

If the angles of the wheelchair frame and the clamp do not match, you can adjust this by loosening screw S4. You can now change the angle of inclination accordingly. If possible, make sure you leave a buffer in both directions so that the ground clearance can also be correctly adjusted later.

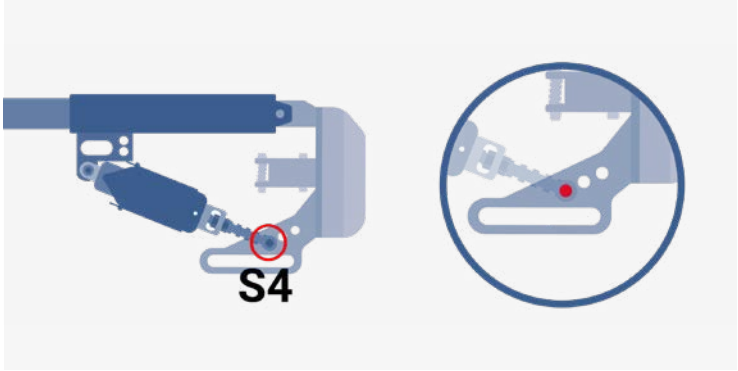


Abb. 22: First hole position for heavy riders

When approaching the upper weight limit of 120 kg for the use of adaptation devices, the clamp can be adjusted so that the automatic locking mechanism is locked in the first hole position and thus provides additional support.

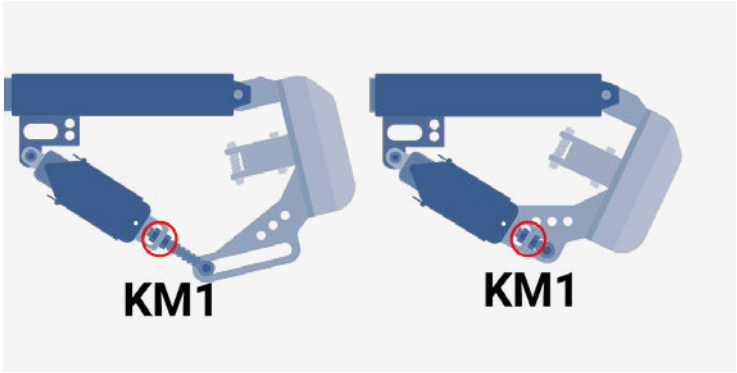


Abb. 23: Automatic adjustment Eyebolt, adjust length

Please note that the following option is not always available. For example, the eye bolt is not available on shorter frames (optional equipment) or as standard on the Crossbike.

Further inclinations can be achieved by adjusting the length of the eyebolt, which is held by the KM1 nuts.

KM1 consists of two nuts. The inner nut influences the length of the screw, while the outer nut is used to lock and fix the setting.

The eyebolt is available in different lengths. The standard length of the thread is 6 cm, the extra-long screw has a thread 9 cm long. Depending on the length of the screw, the thread may protrude a maximum of 3.5 cm (standard length) or 6.5 cm after the lock nut.

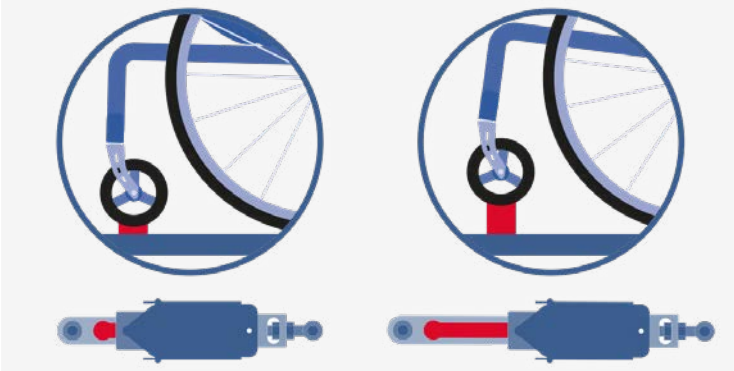


Abb. 24: Automatic louvre - height of castors

The further the carriage of the automatic wheelchair frame protrudes after installation (marked red in the example image), the higher the castors of the wheelchair are raised, which increases the ground clearance. At least one centimetre should be visible to ensure sufficient ground clearance.

Information

We recommend raising the swivel castors by at least 2 cm to 7 cm during operation, depending on the surface.

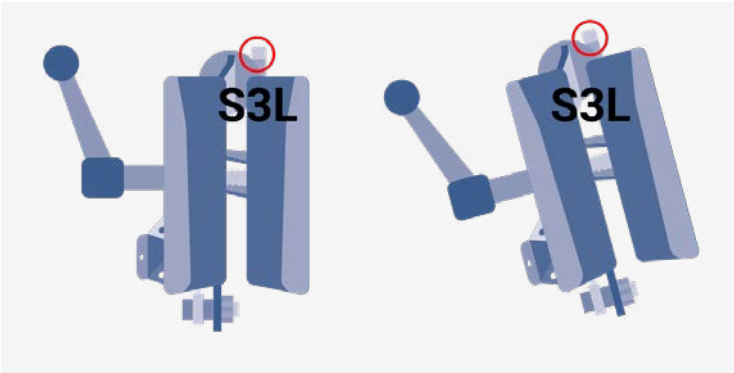


Abb. 25: Adjust the rotation of the clamp

The clamps can be turned by loosening the S3L and S3R screws and adjusted to the frame of the wheelchair.

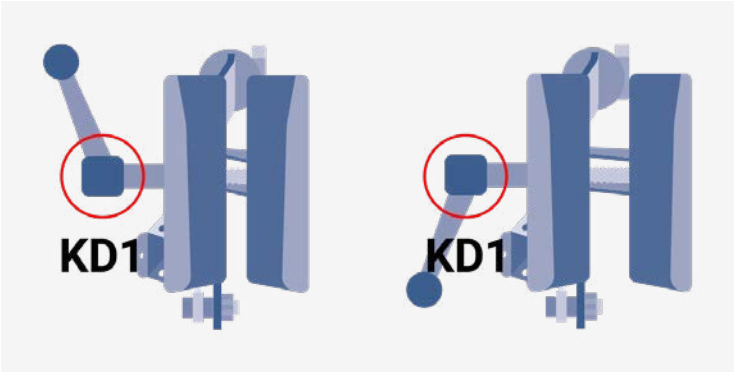


Abb. 26: Opening and closing the clamp

The clamping jaws are opened or closed by turning KD1. For installation on the wheelchair frame, the screw is tightened by hand.

You can now attach the adaptation device to the frame and guide the frame of the wheelchair into the clamps of the adaptation device and tighten the clamps loosely for the time being.

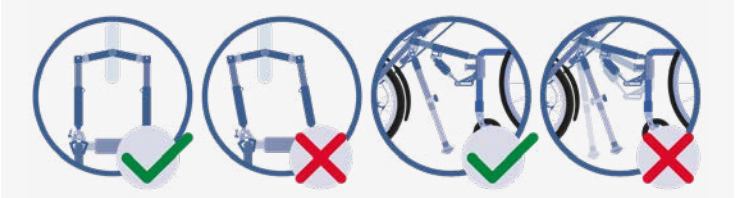


Abb. 27: Positive and negative examples of the frame position

Finally, check that the frame has been fitted symmetrically. The clamps must be at the same height on the headset tube and the frame must be centred in relation to the wheelchair.

6.4.2.1. **Special features of the Lomo 360**

An essential feature of the Lomo 360 is that the wheel can be turned without restriction. It is important that the wheel always turns in the direction of travel. This property is achieved by the curvature of the fork.

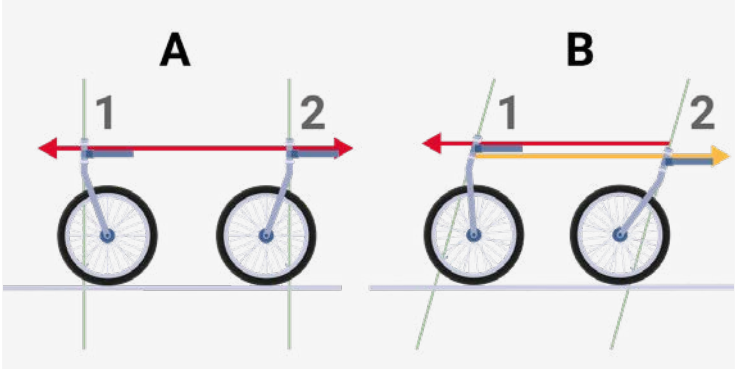


Abb. 28: Lomo 360 settings; 1 = forwards, 2 = backwards

The head tube of the frame can be tilted to adjust this behaviour. Optimum riding characteristics are achieved when the head tube is at a right angle, i.e. 90°, to the ground when jacked up, as shown in the illustration under A.

If the angle is greater or less than 90°, as shown in the illustration under B, the ground clearance of the swivel castors varies during the journey. In such cases, the castors may touch the ground when turning, for example. It is therefore important to select the correct angle for the desired driving experience.

6.4.3. **Adjust frame with centre grid (Pico frame)**

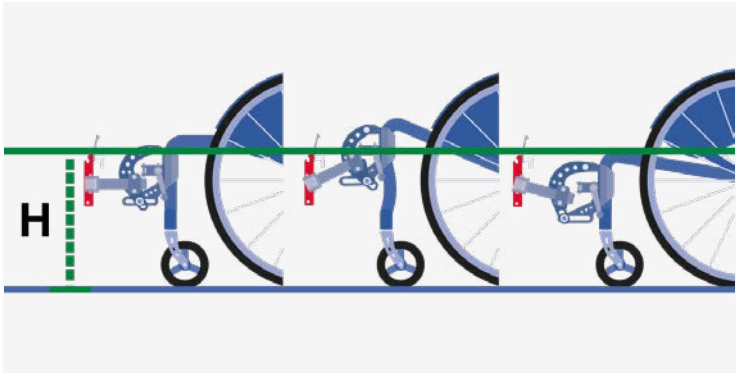


Abb. 29: Correct height of the centre grid

The Pico frame is attached to the wheelchair frame in a suitable position. The upper edge of the centre frame should be fixed approx. 42 cm above the floor.

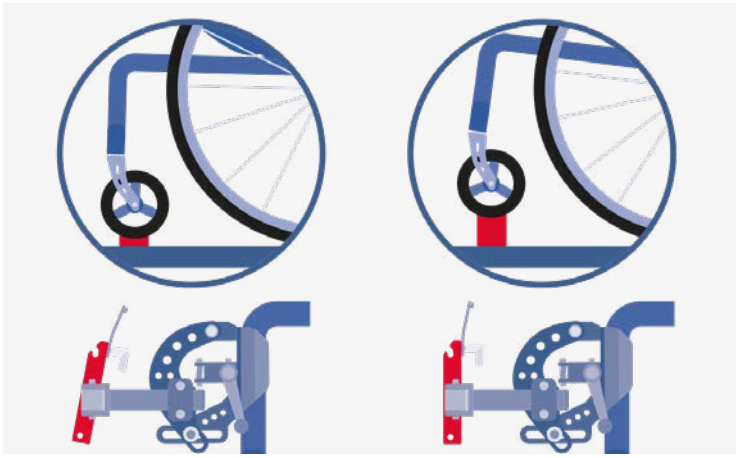


Abb. 30: Angle of the centre grid - Height of the castors

The lower the inclination of the rear centre grid (marked red in the example image), the higher the castors of the wheelchair are raised, which increases the ground clearance. The lowest inclination is achieved when the rear centre grid is at right angles (90°) to the floor.

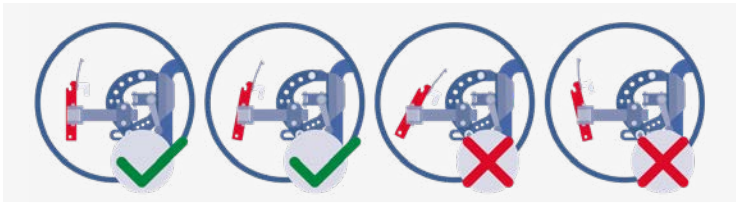


Abb. 31: Positive and negative examples of the angle of the rear centre louvre

The rear centre louvre must not be tilted forwards or backwards by more than 15°.

Information

We recommend raising the swivel castors by at least 2 cm to 7 cm during operation, depending on the surface.

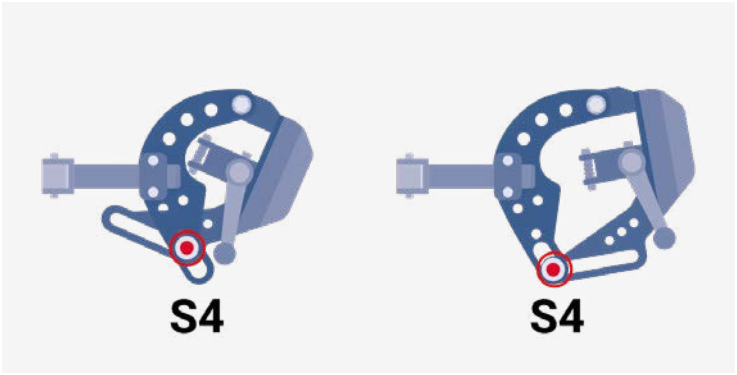


Abb. 32: Adjust the angle of inclination of the clamps

If the angles of the wheelchair frame and the clamp do not match, you can adjust this by loosening screw S4. You can now change the angle of inclination accordingly.

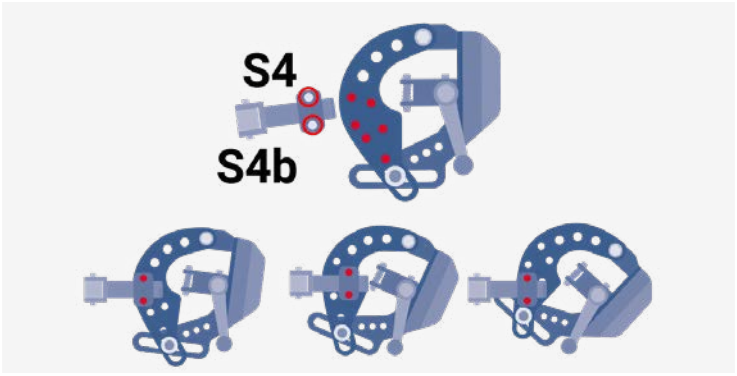


Abb. 33: Extend the angle of inclination of the clamps

If necessary, the angle of inclination of the clamps can be further changed by adjusting the clamp bracket. To do this, the screws S4 and S4b must be completely unscrewed. Find the right position and then tighten the screws again.

Please note that the screws on the back must be fixed with a suitable tool so that the required torque can be achieved.

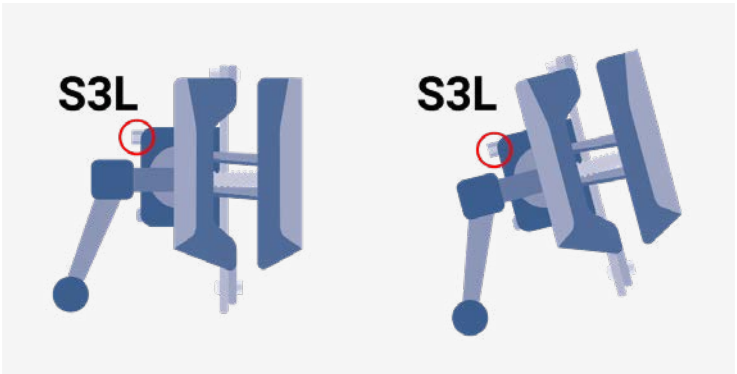


Abb. 34: Adjust the rotation of the clamp

Die Klemmen können durch das Lösen der Schrauben S3L und S3R gedreht und an den Rahmen des Rollstuhls angepast werden.

Please note that the screws must be tightened on the back using a suitable tool so that the required torque can be achieved.

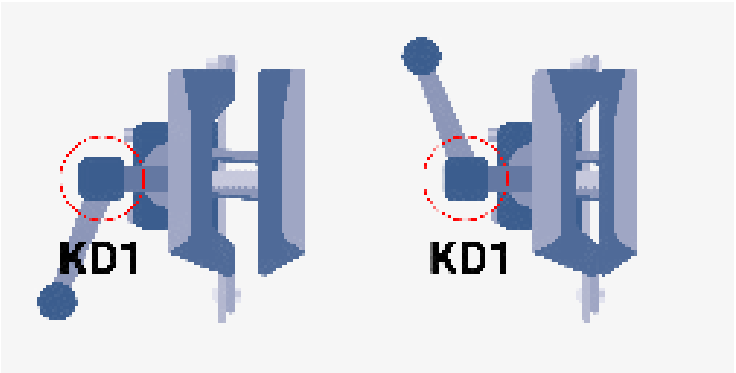


Abb. 35: Opening and closing the clamp

The clamping jaws are opened or closed by turning KD1. For installation on the wheelchair frame, the screw is tightened by hand.

Now you can attach the adaptation device to the frame and guide the frame of the wheelchair into the clamps of the adaptation device and tighten the clamps loosely for the time being.

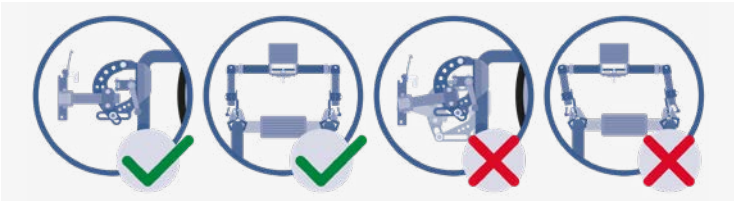


Abb. 36: Positive and negative examples of the frame position

Finally, check that the frame has been fitted symmetrically. The clamps must be at the same height and the rear centre grid must be in the centre of the wheelchair.

6.4.4. **Extended customisation options for the frame**

If a greater distance between the adaptation device and the wheelchair is required, additional frame parts such as aluminium frame brackets (R1) and sliding tubes (R2) are available. We will be happy to help you.

6.4.5. **Adjust handlebars**

Abb. 37: Angle and handlebar distance

Note

This step is complicated and can therefore take several attempts. You are welcome to use our video instructions to help you.

The distance and height of the handlebar are changed by loosening the screws S1L and S1R (angle), S3L and S3R (distance) and S2L and S2R (frame width) and adjusting the angle of the clamp (adaptation angle on the wheelchair).

Please note that the longitudinal tubes attached to the S3L and S3R may be pulled out a maximum of 6.5 cm for short frames (Lipo Lomo Micro; Micro GX, City Kid and Jugend as well as with selected special equipment) and a maximum of 9 cm otherwise.

Information

We recommend that the screws are only slightly loosened and that the adaptation device is already partially attached to the wheelchair.

Warning

If several screws are loosened, the adaptation device may move unintentionally in different directions. Take care not to loosen all the screws and secure the appliance accordingly. Otherwise there is a risk of injury.

6.4.5.1. **Correct handlebar position on the Handbikes**

Align the handlebars at or slightly below chest height so that the cranks only extend slightly or not at all over the shoulders in the highest position.

Make sure that you can reach the furthest distance from the cranks by fully extending your arms without bending your upper body forwards.

Make sure that the cranks do not touch the legs, even when steering, and that you can easily reach and use all controls.

If the cranks are too long, they must be replaced with shorter ones.

6.4.5.2. **Correct handlebar position on the Power assist devices**

The handlebars should be fully accessible. Make sure that the handlebars are within easy reach and can be easily operated when turning. The handlebars must not bump against your body when steering.

Ideally, the handlebars should be adjusted so that the arms rest on the handlebars at a right angle.

6.4.5.3. **Fine adjustment of the handlebars on the Power assist devices**

For further adjustments to the handlebars, read the Handlebars and stem section.

6.4.6. **Adjusting the attachment stand**

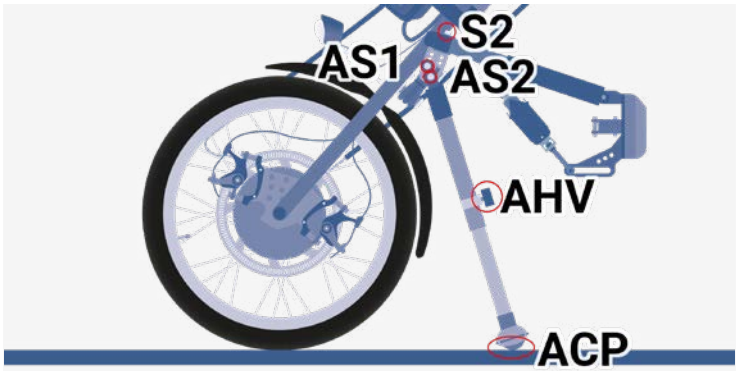


Abb. 38: Adjusting the attachment stand

Please note that this option is not available for some models and equipment types.

The attachment stands are adjusted last. To turn away the attachment stands, loosen the screws S2L and S2R. Adjust one side first and then the other to ensure that other settings are not changed. To adjust the angle to the ground, loosen AS1 and AS2.

The height is set by adjusting the height adjustment device (AHV), which can be designed as either a screw or plug-in connection. With the plug-in connection, please ensure that the plug-in pin is fully extended, which is the case when the pin protrudes at least one millimetre from the hole in the rod. With the clamp connection, it is important that it is tight enough to prevent slippage, but at the same time not too tight to prevent damage to the underlying pipe.

The following points must be observed, depending on the type of add-on stand:

- For add-on stands with rolling balls, only the rolling ball may be in contact with the ground (see ACP in the illustration). If there are other contact points, the add-on stands cannot move as intended.
- For add-on stands with straight castors, ensure that the castors are correctly aligned and point in the direction of travel.

The attachment stands must rest on the side of the wheelchair and must never protrude into the footwell of the wheelchair. They should touch the ground when the castors are lowered to ensure that the adaptation device is kept at the correct height during coupling and uncoupling.

The attachment stands should be adjusted in such a way that the adaptation device stands securely and independently on level ground.

6.4.7. **Fastening the position clamp**

Once you are happy with the settings, you should attach the position clamps directly under the clamps of your adaptation device to the frame of the wheelchair. These position clamps ensure that the clamps of the adaptation device are always attached to the wheelchair in the same position.

Your adaptation device is supplied with these position clamps as standard. We have already selected the appropriate plastic clamps for you based on the frame diameter you have specified for your wheelchair

6.4.7.1. **Available position clamps and scope of delivery**

We offer position clamps for round tubes in our range. These are available for different diameters: 19 mm to 25 mm and 23 mm to 32 mm.

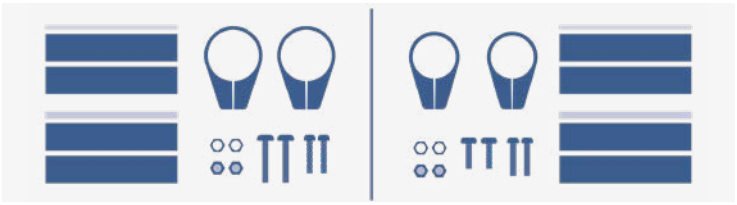


Abb. 39: Large position clamp on the left, small position clamp on the right

The following is included in the scope of delivery of the position clamp:

Quantity	Designation
2	Plastic clamp
2	Thick rubber underlay
2	Thin rubber underlay
2	Long screw
2	Short screw
2	Hexagon nuts
2	Cap nut

6.4.7.2. **Assembly**

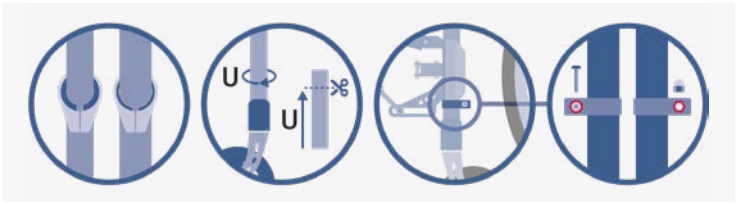


Abb. 40: Assembly aid

Select the rubber with the appropriate thickness based on the frame diameter of the wheelchair and the size of the plastic clamp. Please note that only one rubber should be used for each clamp. The selected rubber should then be adapted to the circumference of the frame of your wheelchair and shortened accordingly.

Once you have prepared the rubber, position the position clamp directly under the clamping jaws of the adaptation device. Ensure that the screw connection of the clamp points to the rear, i.e. towards the driver.

Now insert the appropriate screw and nut into the designated points on the position clamp and tighten them. When selecting the screw and nut, pay attention to the required length.

Finally, check that the position clamp is secure and does not move or slip.

6.5. **Adaptation**

If the frame and handlebar settings have been made correctly, no tools are required for the adaptation. Adaptation is therefore tool-free (tool-free coupling process).

If you realise that you are not satisfied with the settings, for example if the handlebars are not adjusted correctly, you can adjust them to your requirements at any time.

If handled correctly, the adaptation takes place in a short time and can also be carried out on slightly uneven surfaces without any problems.

Note

Ensure that the wheelchair brakes are applied during the adaptation process and then released again.

Warning

Do not carry out the adaptation in an excessively inclined position, as there is a risk of tipping due to the changed centre of gravity and the lifting of the castor wheels.

6.5.1. **Adaptation to the standard frame**

6.5.1.1. **Fixing the frame**

Position the frame of the adaptation device on the wheelchair and fix the clamps of the frame over the position clamps on the wheelchair.

6.5.1.2. **Jacking up**

Close the brakes on your wheelchair. Check that the adaptation device is switched off.

Activate the automatic clicks on both sides and push the handlebars of the adaptive sled away from you until you hear an audible "click" from both sides.

Check that the automatic latches are correctly engaged before driving off.

6.5.1.3. **Jacking up through reverse gear**

Close the brakes on your wheelchair.

Activate the automatic latching mechanism on both sides. Switch on the adaptation device and activate reverse gear.

Accelerate slowly until the wheelchair starts to tip over. If the wheelchair does not tip over, gradually accelerate more strongly. You must do this until you hear an audible "click" from both sides.

Check that the automatic latches are correctly engaged before driving off.

6.5.1.4. **Lowering**

Close the brakes on your wheelchair. Switch off the adaptation device by turning the key switch.

Deactivate the automatic clicks on both sides and push the handlebars of the adaptive sled away from you until you hear an audible „click“ from both sides.

You can now slowly lower the adaptation device and remove it from the wheelchair by releasing the clamps.

6.5.1.5. **Lowering through reverse gear**

Close the brakes on your wheelchair.

Activate the automatic latching mechanism on both sides. Switch on the adaptation device and change to reverse gear.

Increase the speed carefully until the wheelchair starts to tip over. If it does not tip immediately, gradually increase the acceleration. Make sure that you hear a clear „clicking sound“ from both sides. This indicates that the device is correctly locked.

Increase the speed carefully until the wheelchair starts to tip over. If it does not tip over immediately, gradually increase the acceleration.

Make sure that you hear a clear "click" from both sides. This indicates that the appliance is correctly locked in place.

6.5.1.6. **Remove frame**

To remove the frame, loosen the clamps on the adaptation device. You can now push the adaptor away from you.

6.5.2. **Adaptation of the centre grid**

6.5.2.1. **Fixing the frame**

Position the frame, which is separate from the adaptation device, on the wheelchair and fix the frame clamps over the position clamps on the wheelchair.

6.5.2.2. **Jacking up**

If the frame of the adaptation device is correctly fixed to the frame of the wheelchair, the adaptation device can be hooked into the centre grid.

To do this, position the adaptation device in front of the frame, which is fixed to the wheelchair. Insert the bolts of the rear centre lock into the holder of the front centre lock.

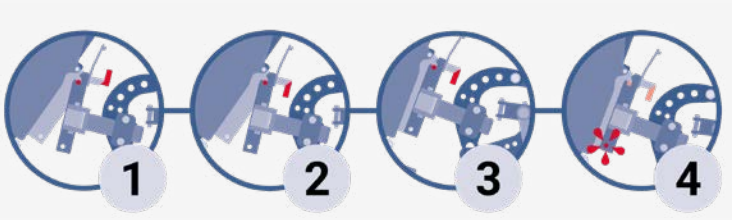


Abb. 41: Adaptation of the centre grid on the frame

As soon as the front centre louvre rests correctly in the rear centre louvre, the locking pin D1 must be turned so that the pin is extended and thus covers the rod of the front centre louvre.

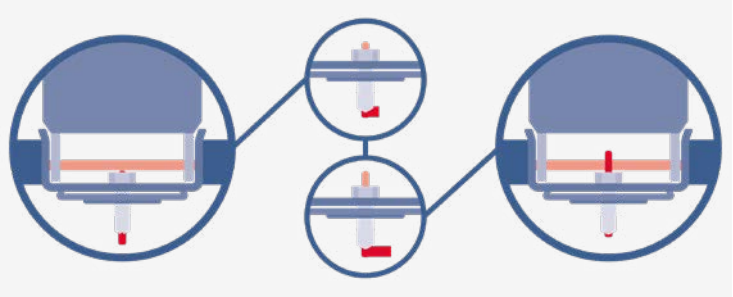


Abb. 42: Engaging the locking pin from the centre grid

The adaptation device can then be jacked up. First close both brakes on your wheelchair, then push the adaptation device away from you in the centre of the handlebar.

If you have problems with this, it can help if you lean backwards and move the centre of gravity further back. If you are physically unable to do this, you can use the reverse gear, which is explained in the manual, to raise the centre of gravity.

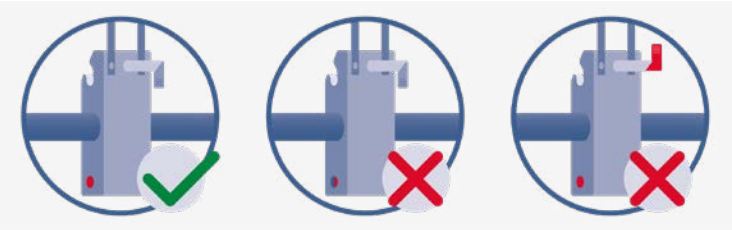


Abb. 43: Positive and negative example: bolt fully extended and locking pin engaged

As soon as the two centre grids are securely connected, you will hear a "clicking sound" from both sides.

Note

Check whether the two lower bolts of the centre grid are fully extended. This is the case when the bolts are flush with the outside of the rear centre louvre. The locking pin must also be correctly engaged.

Warning

If the bolts and the locking pin are not correctly extended and engaged, the castors may be lowered during travel. There is then a high risk of injury!

6.5.2.3. **Lowering**

Before lowering the wheelchair and the adaptation device, make sure that the brakes on the wheelchair are locked. Switch off the adaptation device by turning the key switch.

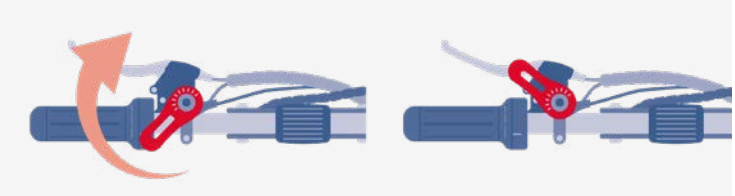


Abb. 44: Release the centre lock using the lever on the handlebars

Release the two centre locks from each other by turning the lever on the handlebar. Lift the handlebars firmly with both hands and push them away from you to prevent uncontrolled lowering of the castors.

You can now slowly lower the adaptation device, release the locking pin and pull the adaptation device away.

Finally, the frame can be detached from the wheelchair by opening the clamps.

6.6. **Final examination**

Check:

- all screw connections (use the specifications from the torque list in the appendices)
- All existing brakes for function and noise
- all existing light sources for function and strength
- All warning devices such as bells and horns are functioning correctly
- the air pressure on all wheels, including those of the wheelchair
- an existing circuit for function
- the chain for reliability (must not come off)
- the thumb throttle or twist throttle for function
- the state of charge of the battery
- the settings by means of an adaptation

If problems occur during or after the test, you can solve them either by going through the Installation and adaptation chapter again or with the help of the Troubleshooting and problem solving chapter.

6.7. **First test drive**

As a final step, carry out a test drive. Drive slowly and carefully at first. Observe the "Commissioning" chapter.

Try out different situations such as driving down a dropped kerb. Pay attention to changes to the settings you have made on the adaptation device, such as the frame slipping. Stop riding if you notice such changes and carry out the installation and adaptation again.

7. **Commissioning**

Commissioning requires correct installation and adaptation.

Carry out these processes carefully before commissioning.

Further, additional information on commissioning can be found in the "Table of contents" chapter. Read this chapter. Read this carefully before carrying out commissioning.

Note

If you notice irregularities such as a drop in tyre pressure, lowering of the adaptor, reduced braking performance or unusual noises while driving, stop driving immediately. Determine the cause of the problem and rectify it before continuing your journey.

Warning

Do not touch any moving parts during the journey and ensure that your clothing does not come into contact with them or be pulled in by them.

7.1. **Short safety check**

Carry out a brief safety check with the following points before each journey.

- Test the function of all brakes independently of each other.
- Test the function of all lights and warning devices (horn, bell).
- Check the air pressure of the adaptation device as well as your wheelchair by pressing in the tyre. If it can be pressed in easily, you must check the tyre pressure more carefully.
- Visually inspect the frame of your adaptation device and your wheelchair. If you notice any damage, we strongly advise against travelling.
- Check the plastic caps on the clamping jaws of the clamping system.
- Check the charge status of your battery.

We recommend further safety checks at regular intervals, depending on time or mileage.

7.2. **Switch on**

Information
This section only applies to devices with electrical support. If you are using a manual adaptation device, you can skip this section.

Switch on the battery of your adaptive device and switch the key switch to the on position. Take care not to operate any controls on the steering wheel.

On devices with a colour display, the control is now switched on either via a control panel (separate switch) on the handlebars or the power switch on the display itself.

7.3. **Start up**

Note
With derailleur gears, avoid shifting when stationary or under heavy load.

7.3.1. **Starting off with the manual Handbikes**

Start the journey by turning the cranks. Starting off is easier in lower gears. We recommend shifting to the lowest gear first, especially on inclines.

7.3.2. **Starting off with the hybrid Handbikes**

The hybrid Handbikes can be started either manually or by activating the thumb throttle.

7.3.3. **Starting with the Power assist device**

You can start off with your Power assist device by pressing the thumb or twist throttle.

7.3.4. **Starting without drive system**

Starting off is only possible by turning the drive wheels of your wheelchair or by pushing an accompanying person.

7.3.5. **Starting on inclines**

Take the special characteristics of your adaptive device into account when travelling uphill. To prevent backward movement, keep the brake, which is equipped without brake cut-off, applied until the acceleration generates sufficient forward force to move the adaptation device forwards.

Note
When starting off with electric assistance, you should accelerate carefully to prevent an uncontrolled or too fast start.

7.3.6. **Steering**

To steer, turn the handlebars carefully in the desired direction. Small steering movements are often sufficient for a slight change in direction.

Look in the direction in which you want to ride. Hold the handlebars firmly with both hands.

At higher speeds, the vehicle combination reacts more sensitively to steering movements. Therefore, be careful and carry out movements gently and in a controlled manner.

7.3.6.1. **Special features when steering with a Handbikes**

Steering with a Handbikes differs from steering a Power assist device, quad bike or motorbike, for example.

Move the cranks in the direction you want to travel. Note that steering the cranks varies in difficulty or ease depending on the crank position. Many people find it easier to steer when the cranks are at chest height and close to the rider. Hold both grips of the handlebars firmly.

You may bump your body when steering while cranking. However, this should be avoided by adjusting the Handbikes correctly.

7.3.7. **Brakes**

You can brake safely using the brake levers on the handlebars or cranks and the coaster brake.

Warning
When braking hard on an adaptive device, especially in an emergency stop, there is a risk that you will be pressed against the handlebars with your upper body due to the forward movement.

There is also a risk of hitting your head or neck against the cranks or other components when riding a Handbikes if you stop abruptly.

7.3.7.1. **Special features of a coaster brake**

Your Handbikes could be equipped with a coaster brake, which is activated by turning the cranks in the opposite direction.

Braking tends to be easier when the cranks are in the lowest position, as you can simply push the cranks away from you in

this position. If, on the other hand, the cranks are in an upper position, you have to pull them towards you to brake, which may require more effort.

It is important to find your optimum braking position. You may need to keep turning the cranks briefly to get the brake in an optimal position. This may seem unintuitive at first, so it is crucial to practise braking sufficiently.

7.4. Reversing

Not all models and equipment are equipped with reverse gear.

On models that have this function, you activate reverse gear by pressing a switch or button. Once activated, you can accelerate backwards using the throttle grip. To deactivate reverse gear again, press the switch or button again.

If your model has a bidirectional handle instead, turning it in the opposite direction allows you to drive backwards.

Note

Always pay attention to your surroundings when reversing. Always look behind you or use a rear-view mirror that adequately covers your surroundings.

If your Handbikes have a reverse gear, pay particular attention to the fact that the cranks can turn during the reverse movement. This can pose a risk of injury.

Warning

When reversing, the steering behaviour changes, which significantly increases the risk of tipping over.

7.5. Switching

7.5.1. derailleur gears

The derailleur must not be shifted when stationary or under heavy load. Otherwise there is a risk of damaging the derailleur or the chain.

7.5.2. Gear hub

The gear hub can be shifted when stationary and while travelling. Avoid shifting under high load.

7.5.3. Planetary gearbox (hill reduction)

The gear hub can be shifted when stationary and while travelling. Avoid shifting under high load.

7.6. Regulating power levels for electric drives

If you have an electric drive, you can regulate the power of the electric drive via different levels.

The number of levels varies depending on the model and equipment. For example, your appliance may have levels 0 to 5 or 1 to three. However, the lower the level, the less power and the higher the levels, the more power.

With hybrid Handbikes, the power of the electric drive is completely interrupted at the lowest level, so that you move without electric assistance and only by your own power.

7.7. Tips for safe and effective use

7.7.1. Driving round bends

Ride slowly when cornering. Due to the high centre of gravity and the nature of a tricycle, you may tip to one side when cornering at too high a speed. This is particularly the case on slopes or obstacles. Familiarise yourself slowly with cornering. Please note that the riding behaviour changes when loaded with luggage and bags. No two adaptive devices behave in the same way.

7.7.2. Driving over obstacles

If possible, always drive over obstacles at right angles. This applies in particular to obstacles such as higher kerbstones, as otherwise you risk tipping over.

Drive over obstacles as slowly and carefully as possible. Always pay attention to the ground clearance of your wheelchair's castors. Large cable ducts, high kerbs or potholes, for example, are a common risk.

Note

If you hit an obstacle hard or fast with your castors, they could bend, break or otherwise be damaged.

7.7.3. Driving in the dark

Always drive in an adapted manner in the dark. Be aware that you may see obstacles late or not at all. Always use appropriate lights and warning signals to see or be seen by other road users.

7.7.4. Driving in wet conditions or on loose surfaces

Please note that riding in wet conditions or on loose surfaces can significantly impair the handling characteristics. The effectiveness of the brakes is reduced due to the longer braking distance and wet brake components. In addition, starting off on inclines is made more difficult due to reduced grip. There may be an increased risk of skidding when cornering.

Information

Many of our models offer the option of being fitted with so-called off-road tyres, which are particularly suitable for riding in wet conditions or on loose surfaces.

7.7.5. Driving in frost

When driving on icy surfaces, the driving characteristics are severely restricted. Please note in particular that the braking effect on ice may be greatly reduced or non-existent. Steering the vehicle can be extremely difficult or even impossible under these conditions, meaning that you could continue to drive straight ahead despite attempts to steer. Starting off is also more difficult due to reduced traction.

Be careful as the ground may be icy, even if this is not obvious. Always drive carefully and adjust your speed to the conditions while being considerate of other road users.

7.7.6. **Avoid or release wheel locking when braking**

When braking on loose, wet or frozen surfaces, the wheel can lock and slide across the ground, which significantly reduces braking performance. In such situations, we recommend first releasing the brake completely to allow the wheel to roll again and then continuing to brake carefully and with reduced force.

7.8. **Road safety**

You are always obliged to comply with the laws and traffic regulations. If you are not familiar with these, you must inform yourself about them before operating on public transport.

Always adapt your behaviour to the traffic. Be aware that other road users are often not familiar with Handbikes, Power assist devices or other adaptive devices and are therefore unable to judge them.

8. **Component and advanced settings**

8.1. **Introduction**

The information in this chapter has a modular structure. It is therefore important to note that some of the components and functions described in this chapter are not applicable to all models.

We recommend that you consult the following overview and the detailed information on your specific model and equipment on your delivery note to quickly identify the sections of this manual relevant to your device.

Type	Possible components
Power assist device	General component, battery, Power assist device component
Handbike	General component, battery, Handbikes component
Stem	General component, Power assist device component

Different components may be used depending on the model and equipment of your adaptation device. It is possible that the component used in your device does not correspond exactly to the illustrations or instructions. However, the basic function and operation is similar and the instructions can be applied accordingly to your specific component.

However, if your component differs significantly from the illustrations or instructions, you may find detailed information in a separate insert. If you have any further questions, please do not hesitate to contact us or your Stricker dealer.

8.2. **General components and functions**

8.2.1. **Frame**

The frame, its components and its function are explained in detail in the "Installation and adaptation" section.

8.2.1.1. **Maintenance recommendation**

Maintain the frame at regular intervals. Re-grease the carriage and the bolt of the auto-adjustment grid if necessary.

8.2.2. **Impeller, casing and inner tube**

8.2.2.1. **Maintenance recommendation**

Maintain the tyre casing and inner tube at regular intervals and replace affected components immediately if they are damaged. Check the tyre pressure and adjust it if necessary.

8.2.2.2. **Tyre pressure**

Abb. 45: Details of the coat

The optimum tyre pressure depends on the selected tyres. Information on the required tyre pressure can be found on the outside of the bike casing and is given in bar or PSI. In some cases, two values are also given, with the lower being the minimum and the higher the maximum value.

In order not to shorten the service life of the casing, it is necessary to maintain the optimum tyre pressure. However, if a suspension effect is desired from the tyre, the tyre pressure can be slightly under-inflated, thereby increasing wear and resistance when riding. However, we advise against exceeding the specified tyre pressure.

8.2.2.3. **Removing or changing the impeller**

Begin with the removal or replacement by switching off any existing batteries and controls and disconnecting the motor. If your device has a chain or toothed belt drive, detach it from the chainring by lifting the chain or belt and sliding it to the side.

Then loosen the nut and the lock nut on the fork or the axle of the wheel. Please note that some adaptation devices have an additional lock to prevent the axle from slipping out. This lock must be completely released using an Allen key.

Once you have completed these steps, you can remove and replace the impeller.

When refitting the wheel, make sure that you carry out all the removal steps in reverse order. Make sure that the wheel is fully inserted into the fork as far as it will go. Then tighten the bolts to the correct torque. It is crucial that the wheel sits absolutely straight in the fork to ensure correct function and safety.

Also check the mudguard and adjust it if necessary. For Handbikes with hub or derailleur gears, it may be necessary to readjust the gears after fitting the bike. Also make sure that the brake callipers of the V-brake or disc brake are correctly adjusted and readjust them if necessary.

Take a test drive to check that all components are correctly installed and functioning.

8.2.2.4. **Jacket and hose change**

Note

For this step, we recommend that you use suitable tools such as a bicycle tyre lever.

When choosing a new tyre or inner tube, make sure that it is compatible with the rim and fork of your Handbikes. Also check that the inner tube and tyre fit together.

Remove the wheel according to the wheel removal instructions in this manual. Then release all the air from the tyre by opening the valve.

Use a tyre lever to place the tyre casing on the tyre sidewall and lift it over the edge of the rim. Repeat this process around the wheel until one side of the tyre casing is completely detached from the rim. Remove the inner tube and then remove the other side of the tyre casing from the rim. Take the opportunity to check the rim for damage and clean the side facing the inner tube.

Now pull one side of the new casing onto the rim, paying attention to the correct running direction marked on the side wall of the casing. Insert the inner tube, either the old one or a new one, into the casing and guide the valve correctly through the hole in the rim.

To insert the inner tube optimally and prevent it from jamming when fitting the tyre cover, it can be helpful to inflate it slightly beforehand. Then pull the tyre completely onto the rim. If necessary, use a tyre lever, but take care not to damage the inner tube.

Once the casing has been fitted, inflate the hose completely. Then reinsert the impeller according to the instructions in the manual.

After a short test drive, you should check the tyre pressure again to ensure that there is no damage.

8.2.3. **Display**

8.2.3.1. **Lipo Lomo, Lipo Lomo Micro, Lipo Smart**

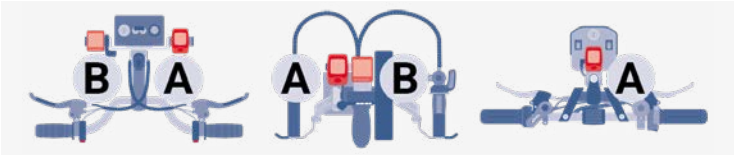


Abb. 46: Displays on the models

The adapter has two displays. One display (A: 36V Battery Monitor) provides various information on the battery such as charge status and charge cycles. Instructions for the battery monitor can be found in the appendices.

The other display (B: speedometer), which is not available on the Lipo Lomo Pico, provides information about your speed.

8.2.3.2. **Crossbike, Smart Wild**

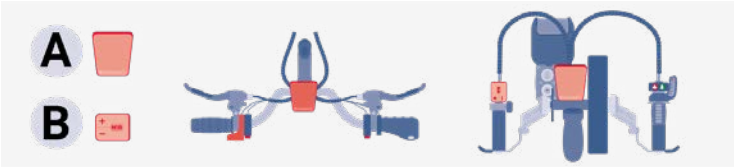


Abb. 47: Displays on the models

On these models, the display (A) can be controlled via a control panel (B).

The control panel consists of the following buttons:

⏻	Switching on and off
M	Change settings, open and close menu
+	Up; increase support level, select in the menu
–	Off; reduce assistance level, select in the menu

You can perform the following actions using the buttons on the control panel:

Action	Description of the
Switch on Switch off	Press and hold the ⏻ button until the display switches on or off
Setting the support levels	Briefly press the + (increase) or - (decrease) button to change the assistance levels
Change view	Press the M button briefly to switch between the "xxx" views (shows xxx)
Open and close menu	Press the M button twice in quick succession to access the menu
Select and close menu item	Press the M button briefly while you are in the menu
Change menu item or setting	Briefly press the + or – button to navigate through the menu items or to change the settings of the selected menu item
Apply setting	Press the M button shortly after you have made the setting to save it

You can adjust the following settings in the display menu:

Setting	Description of the
Display Setting → System	Adjustment of the displayed unit from KM/H or MP/H
Display Setting → Brightness	Backlight intensity
User Settings → Auto off	Display switch-off time when inactive (5 minutes by default)
User Settings → Battery Ind	Changing the capacity display from volts (V) or per cent (%)
User Settings → Start Password	Setting a code that is required to start the display
Basic Settings → Wheel	Wheel size

Basic Settings → Factory Setting	Reset display to factory settings
Basic Settings → Information	Contains various information about the battery

Note

Further settings can only be made by your dealer or the manufacturer.

Incorrectly adjusted settings can have undesirable effects on the display. The display settings have no effect on the driving behaviour or speed of the adaptation device.

Warning

You can assign a start code to the display; this ensures that if a start code is stored, it must be entered each time the device is started. If you forget the start code, you will no longer be able to access the display and may no longer be able to operate the adaptation device.

8.2.3.3. **GX basic equipment**

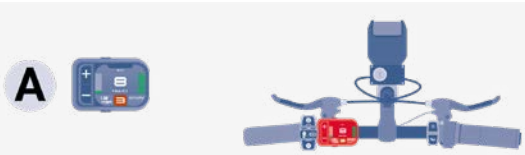


Abb. 48: Displays on the models

The control panels are integrated in the display. The following buttons are available:

⏻	Switching on and off (bottom side)
M	Change settings, open and close menu (top)
+	Up; increase support level, select in the menu
–	Off; reduce assistance level, select in the menu

Action	Description of the
Switch on Switch off	Press and hold the ⏻ button until the display switches on or off
Setting the support levels	Briefly press the + (increase) or – (decrease) button to change the assistance levels
Change view	Press the ⏻ button briefly to switch between the views
Open and close menu	Press the M button twice in quick succession to access the menu
Select menu item	Press the M button briefly while you are in the menu to open the menu item.
Change menu item or setting	Briefly press the + or – button to navigate through the menu items or to change the settings of the selected menu item
Apply setting	Press the M button shortly after you have made the setting to save it
Close menu	Select the "Close" menu item and confirm with the M BUTTON.

You can adjust the following settings in the display menu:

Setting	Description of the
Display → Language	Customisation of the language (the menu must be opened again to apply the change)
Display → System	Adjustment of the displayed unit from KM/H or MP/H
Display → Brightness	Adjusting the brightness
Display → Auto shutdown	Customisation of the automatic display switch-off
Display → Back to	Exit menu item
E-Bike → Password	Setting a code that is required to start the display
E-Bike → Support levels	Adjustment of the possible support levels. In addition, three percentage values can be specified which influence the performance of the stages. None of the values may be lower than the previous ones. None of the values may be set to 0 %. If more than 3 support levels are set, these 3 values are transferred to the number of support levels (interpolated)
E-Bike → Wheel diameter	Adjustment of the wheel diameter (influences the displayed speed)
E-Bike → Battery	Can be switched between 36 V and 48 V
E-Bike → Battery display	Can be switched between per cent, voltage and off
E-Bike → Power display	Cannot be changed
E-Bike → back	Exit menu item
Settings	This area is password protected. The changes have no influence on the driving behaviour
Factory setting → Yes / No	Resets the settings to the factory settings. Set with "Yes" and then confirm with the M button
Factory setting → Back	Exit menu item
Information → Product info	Contains various information about the display
Information → info	Contains information on the battery voltage. The other values cannot be read out for technical reasons
Information → Back to	Exit menu item
Leaving	Exit menu

Note

Further settings can only be made by your dealer or the manufacturer.

Incorrectly adjusted settings can have undesirable effects on the display and driving style.

Warning

You can assign a start code to the display; this ensures that if a start code is stored, it must be entered each time the device is started. If you forget the start code, you will no longer be able to access the display and may no longer be able to operate the adaptation device.

8.2.3.4. **Smart Dynamic**

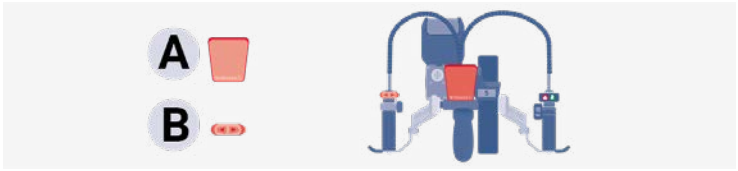


Abb. 51: Displays on the models

On these models, the display (A) can be controlled via a control panel (B).

The control panel consists of the following buttons:

M	Switching on and off, confirming or returning to the menu
>	Up; increase support level, select in the menu
R	Off; reduce assistance level, select in the menu

You can perform the following actions using the buttons on the control panel:

Action	Description of the
Switch on	Press and hold the M button for 3 - 5 seconds until the Stricker logo appears
Switch off	Press and hold the M button for 2 - 3 seconds until the display switches off
Setting the support levels	Briefly press the > (increase) or < (decrease) button to change the assistance levels
Change view	Press the M button briefly to switch between the "Time" (shows the journey time) and "Trip" (shows the distance) views
Open menu	Press and hold the > and < buttons simultaneously for 2 - 3 seconds to access the menu
Close menu	Press and hold the M button for 2 - 3 seconds
Select menu item	Press the M button briefly while you are in the menu
Close menu item	Press and hold the M button for 2 - 3 seconds while you are in a menu item
Change menu item or setting	Briefly press the > (up) or < (down) button to navigate through the menu items or to change the settings of the selected menu item
Apply setting	Press the M button shortly after you have made the setting to save it

You can adjust the following settings in the display menu:

Setting	Description of the
User Settings → Unit Settings	Adjustment of the displayed unit from KM/H or MP/H
User Settings → Backlight Contrast	Backlight intensity
User Settings → Automatic Shutdown Time	Display switch-off time when inactive (10 minutes by default)
User Settings → Trip Distance and Trip Time Clearance	Reset trip
User settings → Battery Unit Display	Changing the capacity display from volts (V) or per cent (%)
About	Contains information on the hardware

Note

Further settings can only be made by your dealer or the manufacturer.

Further information:

ODO	Shows the total mileage and cannot be reset
TRIP	Records the odometer reading from the last reset

Information on the charge status:

The charge status is updated continuously in the volt display, but only in increments of 10 in the percentage display.

	100 % > 50,8V
	80 % <= 50,7 V
	60 % <= 49,4 V
	40 % <= 47,4 V
	20 % <= 45,5 V
	0 % <= 42,9 V

The charge status is updated continuously in the volt display, but only in increments of 10 in the percentage display.

8.2.3.5. **City models, Ultra**

Abb. 52: Display of the models

The speedometer provides information about your speed.

8.2.4. **Control system**

The control unit of the adaptation device is the central unit and connects all electronic components with each other. This is also where the key switch is located, which you can use to switch your adaptation device on and off.

8.2.4.1. **Note on cabling**

Ensure that the cabling is done correctly by paying attention to the colour, designation, shape and slots of the plugs. Always use the correct plugs and avoid forcing them in. Also ensure that the cables are not pulled out forcibly or unintentionally.

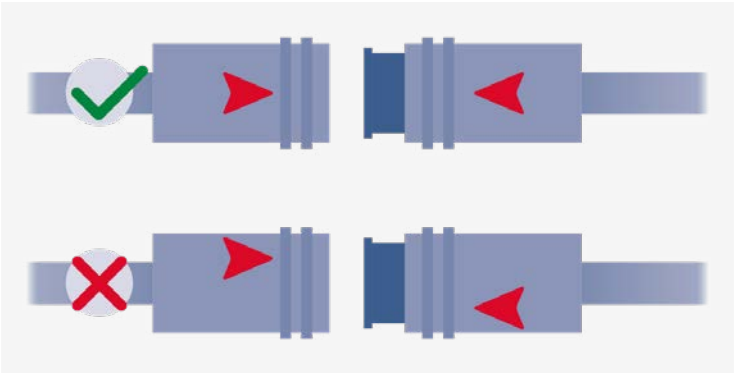


Abb. 53: Connector merging

If there are plugs with imprinted arrows on your device, make sure that these arrows point towards each other when merging.

Warning

Incorrect insertion of plugs can cause considerable damage to the electrical components of your adaptation device. Always ensure that plugs are connected correctly and in accordance with the instructions.

8.2.4.2. **Lipo Lomo Pico**

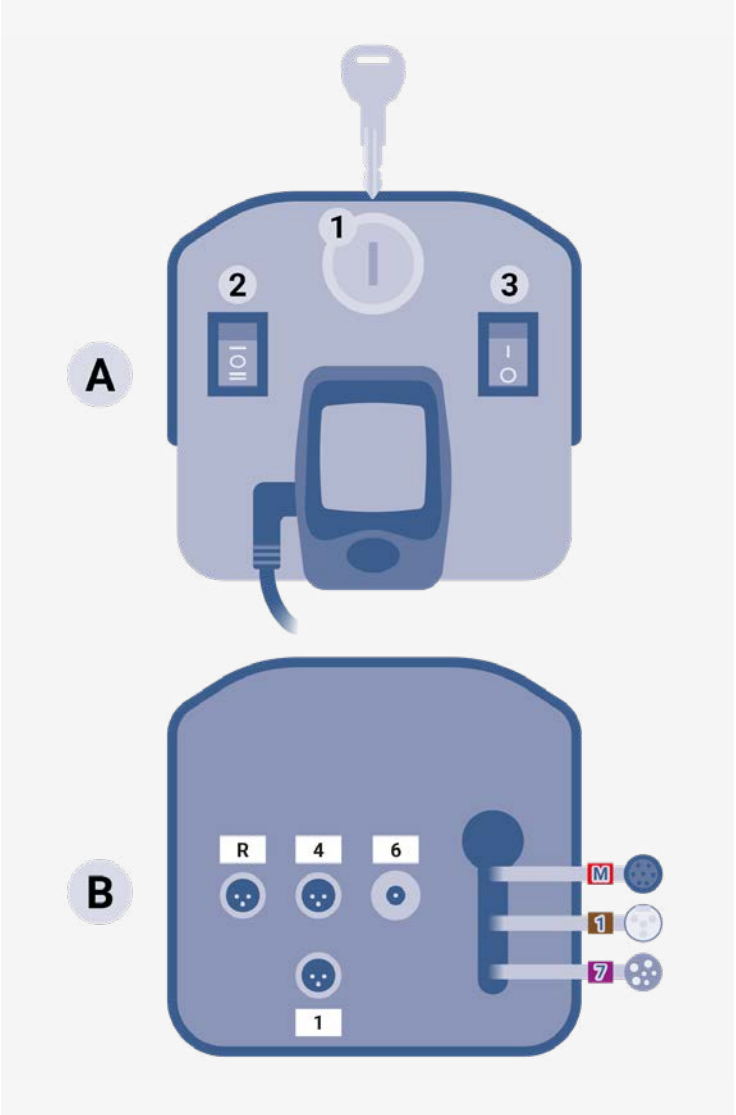


Abb. 54: Lipo Lomo Pico controller with two batteries

Designation	Designation
A	Top side (operating side) of the control unit
A → 1	Key switch for switching the appliance on and off
A → 2	Speed adjustable in three stages (1 / 2 / 3)
A → 3	Light (On / Off)
B → 1	Battery display
B → 4	Throttle grip or thumb throttle
B → 6	Brake cut-off switch
B → 7	Battery
B → R	Reverse gear
B → M	Engine

8.2.4.3. **Lipo Lomo, Lipo Lomo Micro**

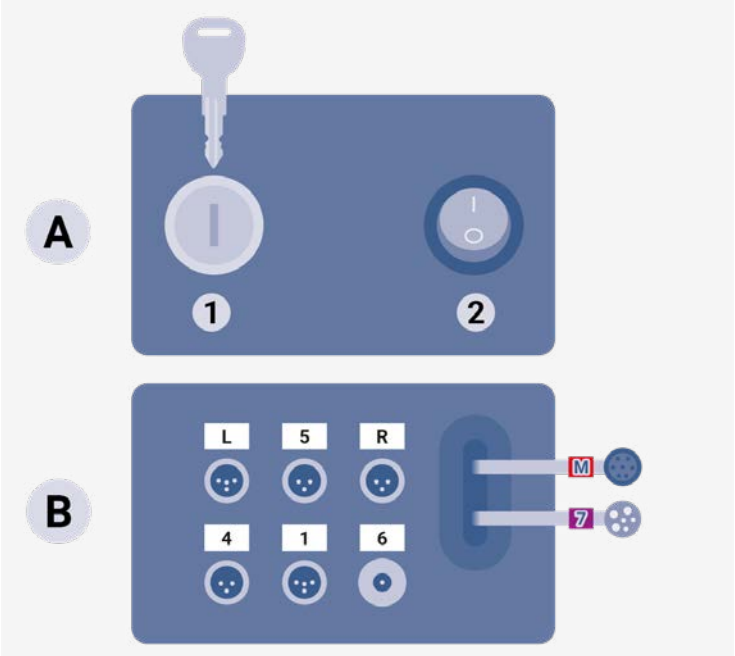


Abb. 55: Lipo Lomo controller with one battery

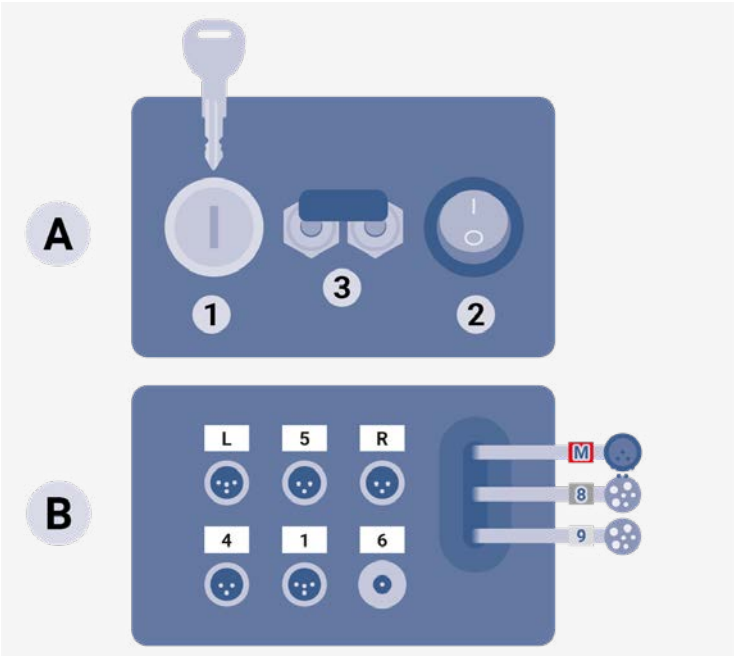


Abb. 56: Lipo Lomo controller with two batteries

Designation	Connection
A	Top side (operating side) of the control unit
A → 1	Key switch for switching the appliance on and off
A → 2	Light (On / Off)
A → 3	Battery changeover switch
B → 1	Battery display
B → 4	Throttle grip or thumb throttle
B → 5	Power regulator, 3-stage switch
B → 6	Brake cut-off switch
B → 7	Battery (No. 1)
B → 8	Battery (1 or 2)
B → 9	Battery (no. 2 or 3)
B → M	Engine
B → L	Lamp
B → R	Reverse gear switch

8.2.4.4. **Lipo Smart**

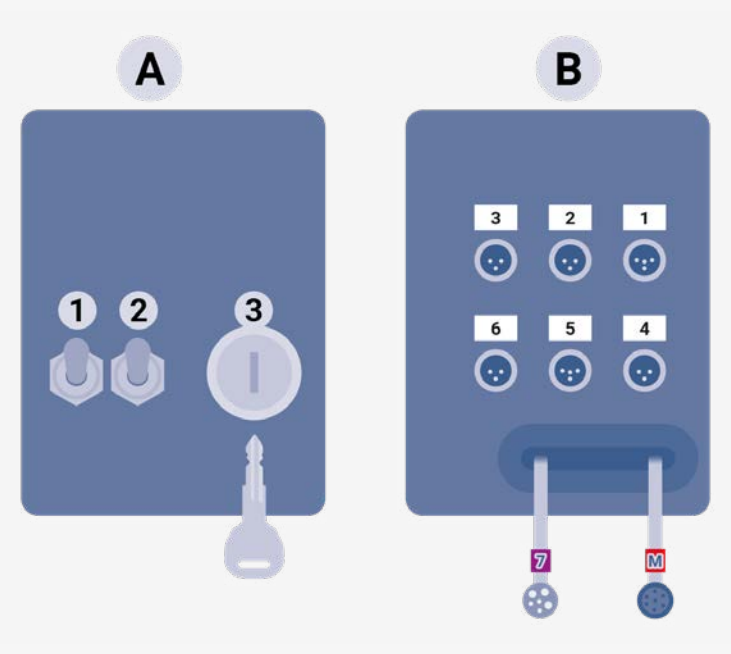


Abb. 57: Lipo Smart controller with one battery

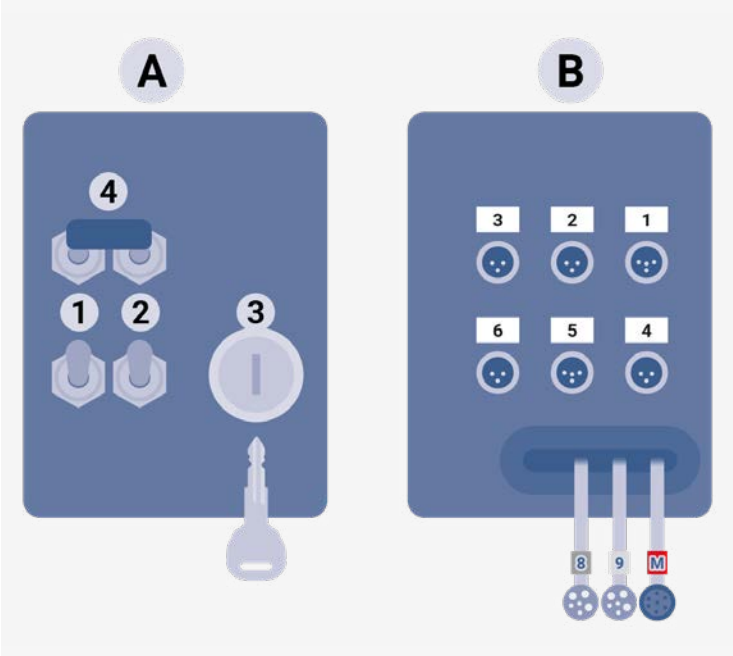


Abb. 58: Lipo Smart controller with two batteries

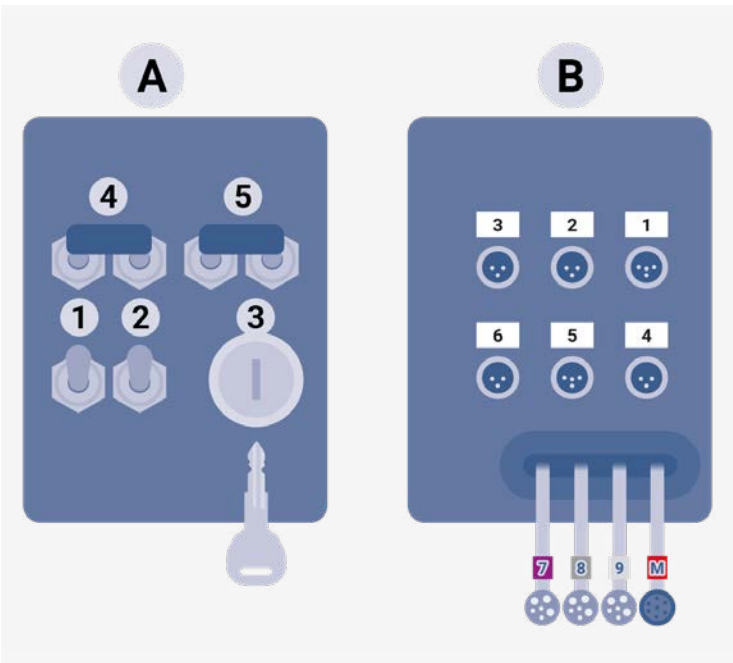


Abb. 59: Lipo Smart controller with three batteries

Designation	Connection
A	Top side (operating side) of the control unit
A → 1	Light (On / Off)
A → 2	Speed adjustable in three stages (1 / 2 / 3)
A → 3	Key switch for switching the appliance on and off
A → 4	Battery switch for the left and right battery The left battery is used when the switch is up, the right battery when the switch is down
A → 5	Battery switch for the upper or lower (link and right) batteries The upper battery is used when the switch is in the up position and the lower batteries when the switch is in the down position
B → 1	Battery display

B → 2	Padelec sensor
B → 3	Power regulator (potentiometer)
B → 4	Thumb gas
B → 5	Lamp
B → 6	Start-up aid for the Tetra equipment
B → 7	Battery (No. 1)
B → 8	Battery (1 or 2)
B → 9	Battery (no. 2 or 3)
B → M	Engine

8.2.4.5. **Smart Wild, Crossbike**

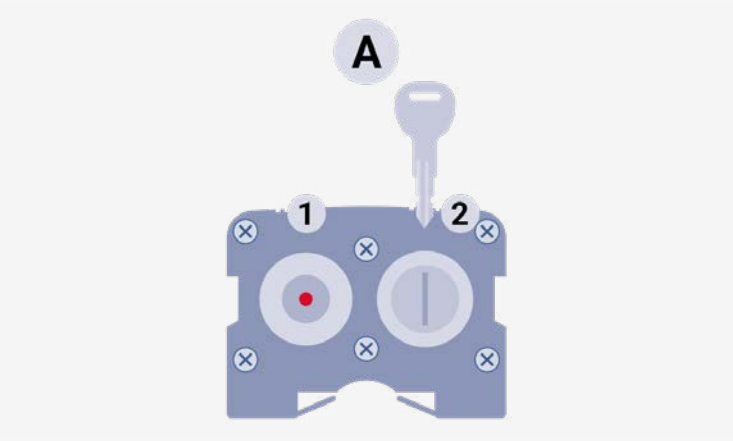


Abb. 60: Smart Wild and Crossbike controls

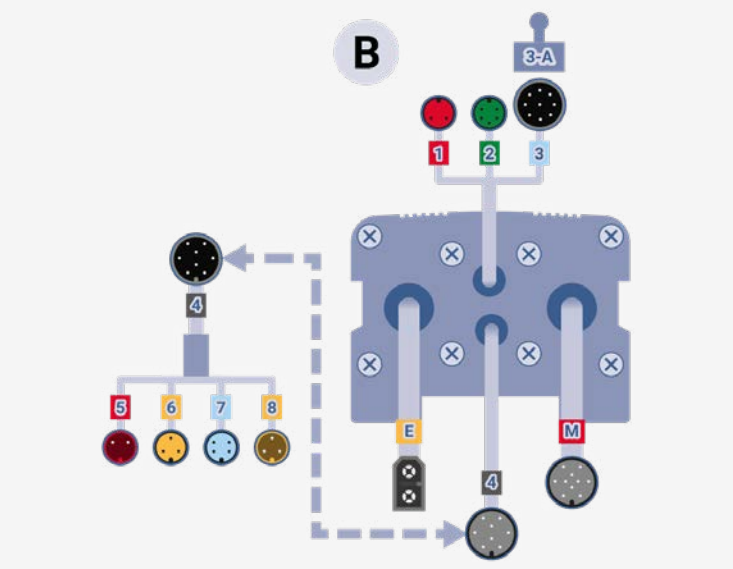


Abb. 61: Smart Wild and Crossbike controls

Designation	Connection
A	Top side (operating side) of the control unit
A → 1	LED indicator for reverse gear
A → 2	Key switch for switching the appliance on and off
B → 1	Lamp
B → 2	Display
B → 3	Programming interface
B → 3-A	Covering the programming interface
B → 4	Distribution cable

B → 5	Brake cut-off switch
B → 6	Throttle grip or thumb throttle
B → 7	Multiswitch (reverse gear and thumb throttle)
B → 8	Padelec sensor
B → E	Battery
B → M	Engine

8.2.4.6. **Smart Dynamic**

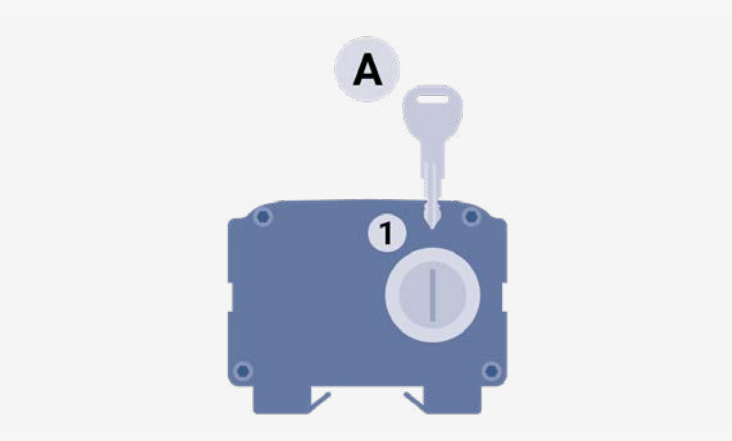


Abb. 62: Smart Dynamic control system

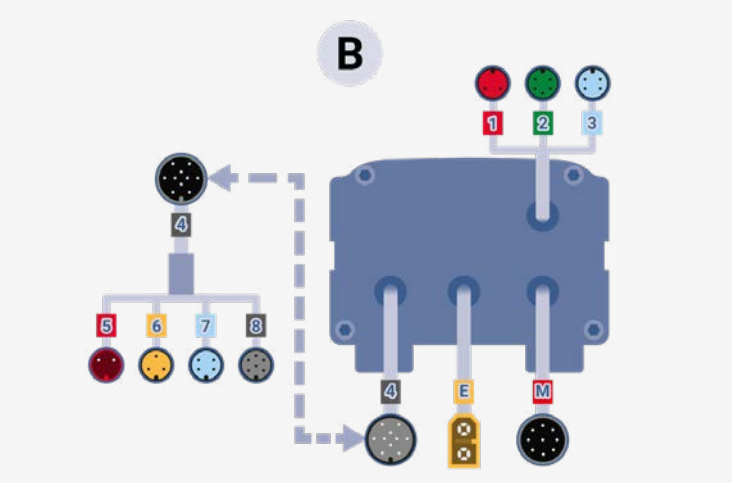


Abb. 63: Smart Dynamic control system

Designation	Designation
A	Top side (operating side) of the control unit
A → 1	Key switch for switching the appliance on and off
B → 1	Lamp
B → 2	Display
B → 3	Programming interface
B → 4	Distribution cable
B → 5	Brake
B → 6	Thumb gas
B → 7	Cruise
B → 8	Torque sensor
B → E	Battery
B → M	Engine

8.2.5. **Basic operating elements**

It is possible that this section does not cover all the operating elements available on the adaptation device. The description of other operating elements can be found in the following sections.

This section also includes operating elements that may not be present on your adaptation device.

8.2.5.1. **Power assist devices**

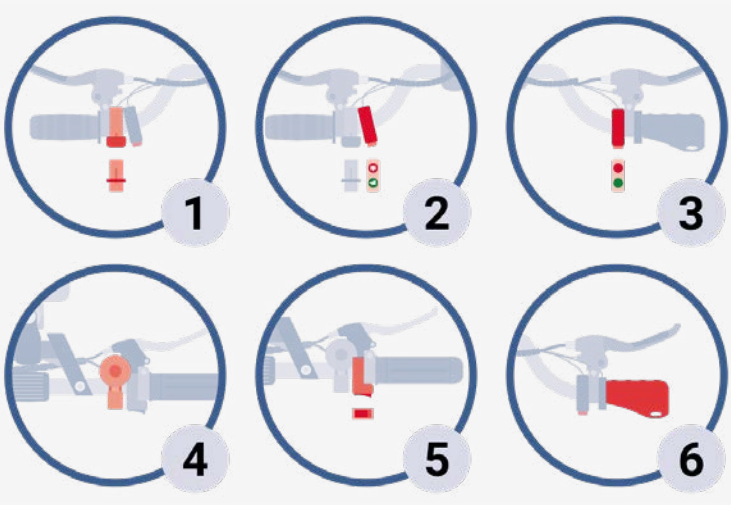


Abb. 64: Basic operating elements on the Power assist devices

Designation	Description of the
1	Thumb gas
2	Light and horn
3	Cruise control (green) and reverse gear (red)
4	Bell
5	Reverse gear
6	Rotary throttle

8.2.5.2. **Handbike**

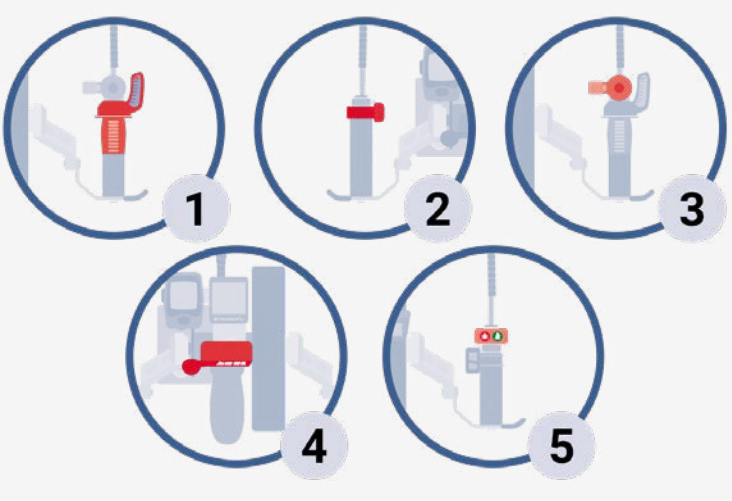


Abb. 65: Basic operating elements on the Handbikes

Designation	Description of the
1	Twist shifter or click shifter
2	Thumb gas
3	Bell
4	Power regulator (potentiometer)
5	Light and horn

8.2.5.3. **Handbikes with Tetra equipment**

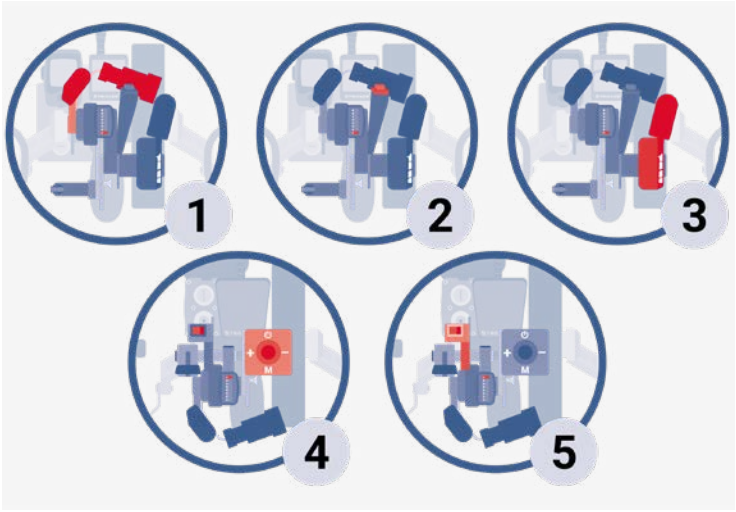


Abb. 67: Basic controls on the Handbikes with Tetra equipment

Designation	Description of the
1	Chin switch
2	Starting aid
3	Power regulator (potentiometer)
4	Chin control of the display
5	Reverse gear

8.2.6. **GX equipment**

8.2.6.1. **Structure multiswitch**

The multi-switch is used to operate the designated functions. Buttons 1 to 3 have an additional status light.

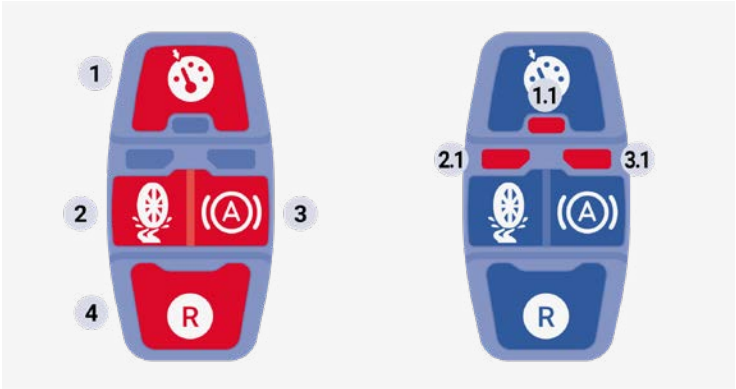


Abb. 69: Multiswitch

Designation	Description of the
1	Cruise control (Cuise control)
1.1	Cruise control status light
2	Traction aid (indoor mode)

2.1	Traction aid status light
3	Automatic brakes (Auto brake)
3.1	Status light Automatic
4	Reverse gear (Reverse)

8.2.6.2. **Bidirectional throttle grip**

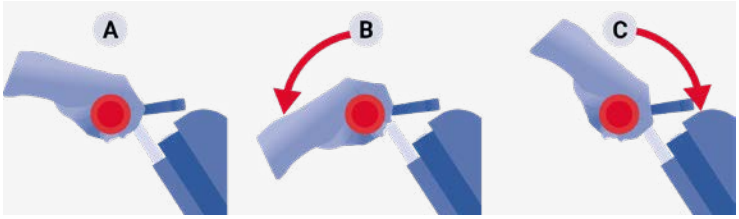


Abb. 70: Bidirectional throttle grip

Designation	Description of the
A	Zero position (stand-by)
B	Accelerating or braking (engine braking with recuperation) when reverse gear is active
C	Braking (engine brake with recuperation), reverse gear

In the zero position (A), neither acceleration nor braking takes place unless the automatic brake is activated. In this case, the adaptation device brakes automatically.

Acceleration is achieved by turning the throttle grip backwards (B). When reverse gear is activated, the adaptation device accelerates backwards instead of forwards.

Turning forwards (C) brakes the adaptation device completely. As soon as the adaptation device comes to a standstill, it accelerates backwards (reversing).

Note

Due to technical circumstances, the engine brake only has a limited braking force. A mechanical brake must therefore be used in situations such as emergency braking or when travelling on steep inclines.

8.2.7. **Lighting and warning devices**

8.2.7.1. **Front lamp with horn on the system**

The front light with horn is powered by the rechargeable battery of your adaptive device.

Note

If the battery of the adapter device is completely empty, neither the horn nor the lights will work.

8.2.7.2. **Front lamp with batteries**

The front lamp is powered by 4 x AAA batteries.

8.2.7.3. **Front lamp with rechargeable battery**

The front light is powered by a rechargeable battery. Charge the battery using a suitable USB cable with a 5 V connection, which is often standard for regular USB charging sockets.

8.2.7.4. **Rear light with batteries**

The rear light is powered by an LR-44 button cell battery.

8.2.7.5. **Rear light with rechargeable battery**

The rear light is powered by a rechargeable battery. Charge the battery using a suitable USB cable with a 5 V connection, which is often standard for regular USB charging sockets.

8.2.7.6. **Bicycle bell**

Make sure that the bell does not touch any other objects so that it sounds loud enough.

8.2.8. **Wheel hub motor**

The wheel hub motor is located in the wheel. It is attached to the fork by two nuts and, on some models, by an additional bracket.

8.2.8.1. **Geared motor**

A motor with a gearbox is often lighter than a direct drive motor. If you hear abnormal noises coming from the engine, this could indicate damage to the gearbox.

8.2.8.2. **Direct runner**

Direct drive motors are generally quieter and can recover energy through recuperation. However, they usually weigh slightly more than geared motors.

8.2.9. **Engine braking and recuperation**

Warning

The motor brake only works in conjunction with recuperation. If the battery is fully charged or the motor is overheated, recuperation and therefore braking is not possible.

8.2.9.1. **Recuperation**

Please refer to the documentation to find out whether your adaptation device has recuperation.

Recuperation, i.e. the recovery of energy through braking, is activated as soon as the corresponding brake is applied.

Note

Recuperation only takes place when the battery is not fully charged.

8.2.9.2. **Engine brake with brake lever**

Abb. 72: Recognising the recuperation brake

You can recognise the recuperation brake by another signal cable in addition to the brake cable. In the example illustration, it is the right-hand brake.

When light pressure is applied to the brake, the adaptation device is only braked by the motor, which is sufficient for gentle braking manoeuvres.

If stronger braking is required, for example to stop at traffic lights, the brake must be pressed harder, which also activates the mechanical brake.

Recuperation occurs even when the brake is lightly applied.

8.2.9.3. **Motor brake with bidirectional handle**

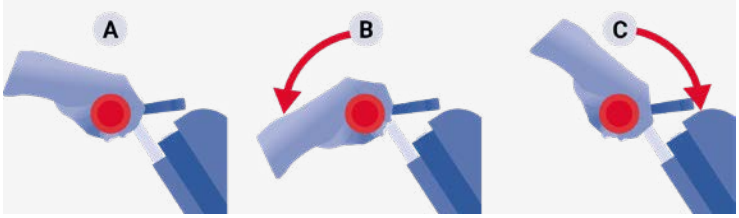


Abb. 73: Braking with the bidi handle

In the standard setting, the handle must be turned forwards (C). However, if reverse gear is active, the handle must be turned to the rear (B) to brake. Recuperation takes place during braking.

We do not recommend this braking method if more powerful braking is required, such as in the event of emergency braking. The mechanical brake must be used instead.

8.2.10. Electromagnetic brake

The electromagnetic brake is activated when the throttle grip or thumb throttle is released. It reliably brings the vehicle to a standstill, even on slopes. It is automatically deactivated as soon as the throttle grip or thumb throttle is operated again.

If the set maximum speed, for example 6 km/h, is exceeded, the brake engages and releases again as soon as the speed drops to the set value.

Information

Whether the electromagnetic brake is part of the standard equipment of your adaptation appliance or is available as a special option depends on the specific national regulations. A corresponding note on the delivery note provides information about the equipment of your appliance.

Note

With a high total load in combination with a steep gradient, the electromagnetic braking power alone may not be sufficient. In these rare cases, it is necessary to brake additionally using the brake lever. This manual assistance should only be considered as an additional safety measure in special situations.

8.2.11. Disc brakes

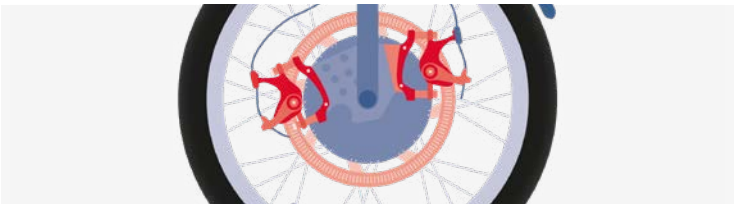


Abb. 74: Example of the disc brake with two brakes

Disc brakes offer high braking power and are effective in wet conditions. They consist of a brake disc on the wheel and a brake calliper. They require little maintenance, but regular checks are important. There are different types of brake caliper.

8.2.11.1. **Adjusting the brake cable on the brake calliper**

Abb. 75: Adjusting the adjustment screw

You can adjust the distance between the brake pads or the tension of the cable by turning the screw plug. Further adjustment options may also be available on the brake lever.

If this is not sufficient, you can also tighten the cable in another way. Screw in the adjusting screws of the brakes and, if present, the brake levers completely, i.e. as far as they will go.

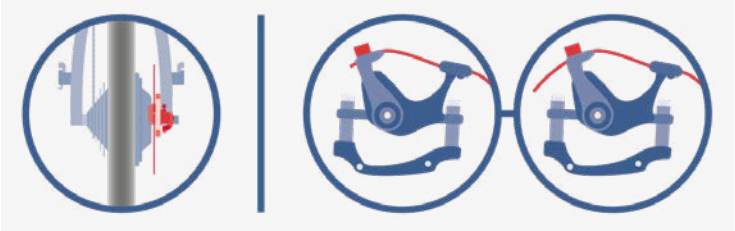


Abb. 76: Retighten cable pull

Loosen the (hexagon socket) screw on the moving lever of the brake calliper. Now adjust the moving lever so that the brake pads are as close as possible to the brake disc without touching it. To do this, the cable must be tightened, preferably using pliers.

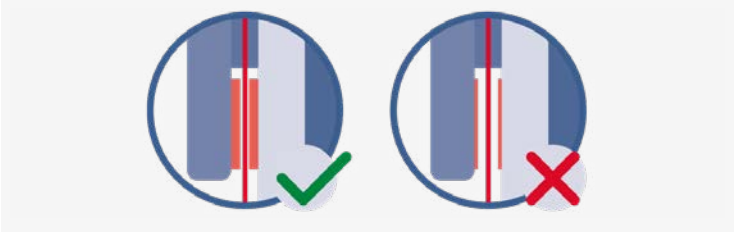


Abb. 77: Positive and negative example of disc brakes

The distance to the brake disc should be kept as small as possible. However, there must be a minimum distance so that the brake pad does not rub against the brake disc.

8.2.11.2. **Special feature single-sided closing brake calliper**

The non-moving brake pad of the single-sided closing brake calliper must be adjusted regularly as it holds the rear of the brake disc against it.

Abb. 78: Example of the disc brake with two brakes

To adjust the brake, it is first necessary to loosen the 5 mm hexagon socket screw located near the adjusting screw, which secures it. Then reach through the wheel to turn the brake calliper adjustment screw and adjust the brake pad. Do not forget to retighten the hexagon socket screw to secure the adjustment screw.

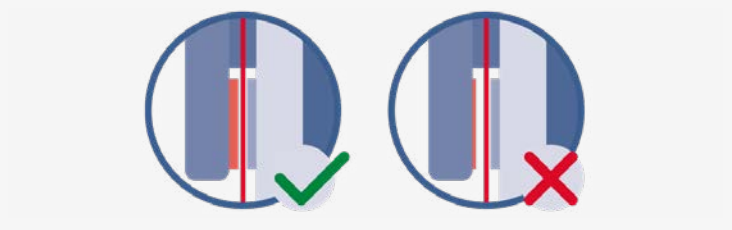


Abb. 79: Positive and negative example of disc brakes

The distance to the brake disc should be kept as small as possible. However, there must be a minimum distance so that the brake pad does not touch the brake disc.

8.2.12. **Mechanical braking systems**

8.2.12.1. **Bowden cables**

Bowden cables transmit the mechanical force from the brake levers to the brakes and ensure a reliable braking effect.

8.2.12.2. **Hydraulic or hybrid brakes**

Hydraulic brakes on bicycles use fluid to transfer pressure from the brake levers to the brake pads, which enables efficient and powerful braking action. These systems offer high braking power and are particularly effective in poor weather conditions.

Note

The maintenance, adjustment or replacement of hydraulic brakes should only be carried out by specialised personnel. The reason for this is that the hydraulic system requires specific expertise and tools, especially when bleeding the system or replacing brake fluid.

Warning

Improper maintenance of the brakes can lead to serious impairments in their function.

8.2.13. **Brake lever**

Abb. 80: Brake lever on Power assist devices and Handbikes

The brake levers enable targeted and optimally regulated braking.

8.2.13.1. **Adjusting the brake cable on the brake lever**

Abb. 81: Tighten the cable on the brake lever

You can adjust the distance between the brake pads or the tension of the cable by turning the screw plug. Further adjustment options may also be available on the brake.

8.2.14. **Twist, thumb and chin gas**

You can use the twist, thumb and chin throttle to accelerate your adaptation device, such as a Handbikes. The control element is particularly suitable for starting off, especially on inclines.

When starting off, make sure that you only press the twist, thumb and chin throttle lightly at first and then gradually press harder to prevent the drive wheel from slipping.

8.2.15. **Cruise control**

With cruise control, you can maintain the speed you were travelling at when you activated it without having to accelerate again. You can find out whether your adaptation device has cruise control in the documentation.

Note

Always ride attentively and with both hands on the handlebars. Always be ready to switch off the cruise control and brake.

8.2.15.1. **Activating and deactivating cruise control**

Accelerate the adaptation device to the desired speed. You can now activate cruise control to maintain this speed. Cruise control is activated or deactivated using the corresponding control element.

You can also switch off cruise control using the brake, which has an engine cut-off function, or the bidirectional handle.

8.2.15.2. **Standard cruise control**

Cruise control only provides acceleration. When travelling downhill, the speed cannot be maintained; you may then speed up and have to brake manually.

8.2.15.3. **Cruise control in the GX equipment**

The cruise control of the GX equipment maintains the speed thanks to the engine brake, even when travelling downhill. However, if the incline is too steep, you may have to brake manually.

8.2.16. Steering damper

The steering dampers are used to keep the handlebars centred to prevent unwanted or unintentional steering. The steering dampers also prevent the handlebars from over-rotating. The steering dampers are located above the wheel and connect the headset tube to the frame.

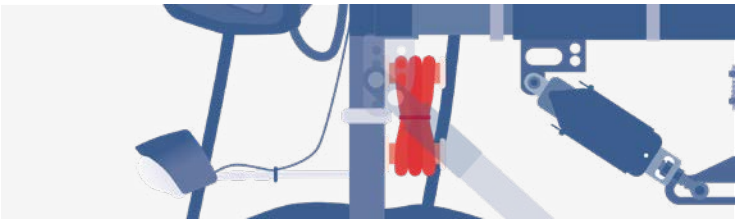


Abb. 82: Steering damper

The steering dampers can be tensioned using one or more weatherproof cable ties, which increases the effectiveness of the steering dampers. This is done by tying the cable ties around the rubbers of the steering dampers and tightening them.

8.3. Batteries and charger

The maintenance-free, rechargeable batteries and chargers provided are intended exclusively for operating and charging the batteries of the adaptation device. Any other use requires the written consent of the manufacturer. These instructions correspond to the latest state of technology at the time of publication.

Do not use batteries from other manufacturers, even if they look similar. Our batteries have been specially developed for use with adaptive devices. The use of batteries from other manufacturers can lead to malfunctions and damage to the device or battery.

Protect the batteries from moisture, water and foreign bodies. Prevent the battery terminals from coming into contact with metal or conductive materials to avoid short circuits. In the event of overheating, leaks, smoke, unusual odours or deformation of the battery, stop using the device immediately and switch it off.

The batteries should always be protected from extreme heat, direct sunlight and naked flames to prevent the risk of ignition and explosion.

The housing of the battery must not be opened or dismantled, as this can not only lead to a fire hazard, but also invalidate the warranty.

If the battery is damaged or defective, please contact your specialist dealer or the manufacturer directly.

We accept no liability for damage in the event of misuse. Misuse includes, among other things

- Use of the battery contrary to the description and instructions in the instructions for use
- Use of the battery when the technical performance limits are exceeded
- Technical or physical modification of the battery
- Changing the battery software
- Use of the battery to supply other systems
- Opening the housing

Warning

In the event of contact with escaping gases, provide fresh air immediately. If you come into contact with battery fluids, rinse the affected area immediately with plenty of water. In the event of contact with mucous membranes or if you experience any symptoms, please consult a doctor immediately.

Note

Before carrying out repair, cleaning or maintenance work on an adaptation device, switch off the electrical components and remove the batteries.

8.3.1. Operation

Only operate the battery within a temperature range of -20°C to 50°C to ensure an optimum service life and avoid the risk of ignition.

Protect the battery from physical impact. After a fall or heavy impact, it should always be checked by the manufacturer.

Information

The battery protection cover from our range of accessories protects against the weather, sunlight and light impacts. Ideal for extending the service life of your battery.

With proper use and care of the battery, a capacity of 80 % can be expected after 400 charge/discharge cycles.

8.3.2. Charging process

Only charge the batteries within a temperature range of 0°C to 40°C. Charging may be cancelled at temperatures outside this range. To optimise the service life of the battery, we recommend charging in a temperature range of 20°C to 30°Ca. Avoid unnecessary charging processes. In addition, you should not charge the battery for long periods when it is not in use.

Charge the battery in a well-ventilated, dry and, if possible, dust-free area. Ensure sufficient air circulation during the charging process. Avoid charging in the vicinity of flammable materials such as solids, liquids or gases. Do not charge the battery in environments with high electromagnetic interference.

Always protect the battery from moisture when charging. Avoid charging in rooms where there is a risk of water condensing on the battery or charger. Ensure that the charger is

completely dry before using it. If condensation has formed on the charger, allow it to dry completely before charging.

Only use the charger included in the scope of delivery to charge the battery. The use of any other charger harbours risks such as malfunctions, damage, defects, ignition or even explosions. Never charge the battery with a defective charger and replace damaged chargers immediately. Do not use a charger that is damaged, has suffered an impact or has been dropped. Under no circumstances should the charger be opened, repaired or tampered with in any way. Do not charge damaged batteries.

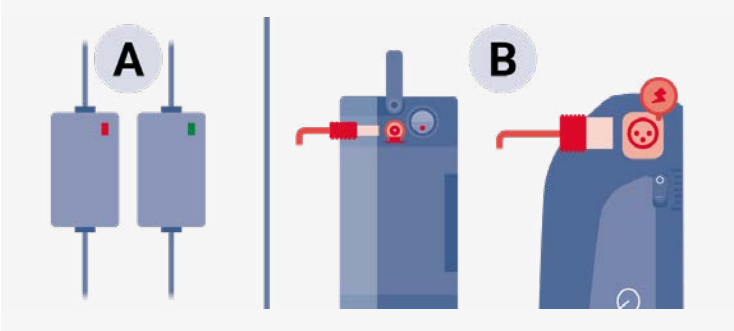


Abb. 83: Example: Charging socket

The battery charging process stops automatically as soon as it is fully charged. The end of the charging process is indicated by the status light on the charger (A). Red means that the battery is still charging, while green indicates standby mode. After charging, you should first disconnect the charger from the socket and then from the battery (B).

Do not carry the charger by its power cord or charging cable and avoid pulling on the power cord to disconnect the charger from the socket. Ensure that the cable and plug are not pressurised or pinched to avoid the risk of electric shock or ignition.

Position the charger so that no-one can step, drive or trip over the cables or the device.

8.3.3. **On/off switch**

The rechargeable batteries have an on/off switch, which is located on the side of the battery. The on/off switch has an LED that lights up when the battery is switched on.

We recommend that you always switch off the battery when you are not using or charging it. The battery must be switched off during transport.

8.3.4. **Charging socket**

The battery can be connected to the supplied charger via the charging socket. The charging socket is located on the side of the battery. The charging socket is closed by a flap. Always keep this closed when you are not charging the battery.

8.3.5. **Battery variants**

8.3.5.1. **Hailong (48 V)**

Abb. 84: Example image: Hailong battery

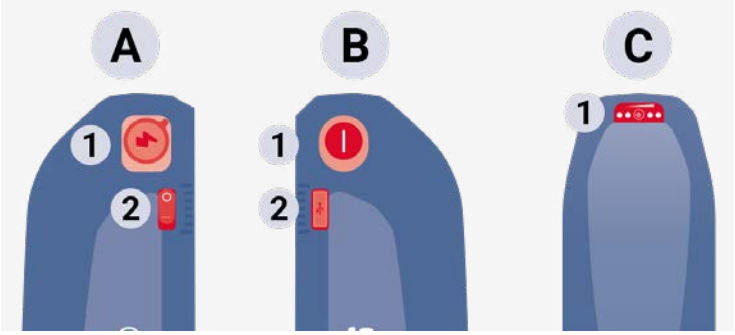


Abb. 85: Description: Hailong battery

Designation	Description of the
A	Right side
A → 1	Charging connection
A → 2	On/Off switch
B	Left side
B → 1	Battery lock key
B → 2	USB charging port (not available on all batteries)
C	Top side
C → 1	Capacity display

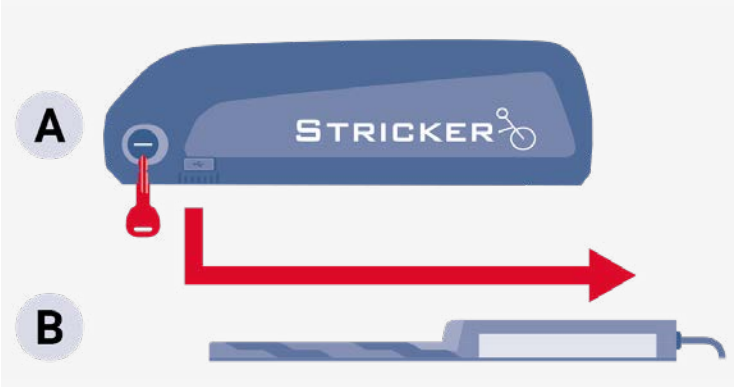


Abb. 86: Description: Connect Hailong battery

To connect the battery (A), it must be placed on the battery rail (B), which is mounted on the adaptor, and then snapped downwards. The battery is secured with the battery spanner.

8.3.5.2. **Jenny Bag (36 V)**

Abb. 87: Example image: Jenny Bag

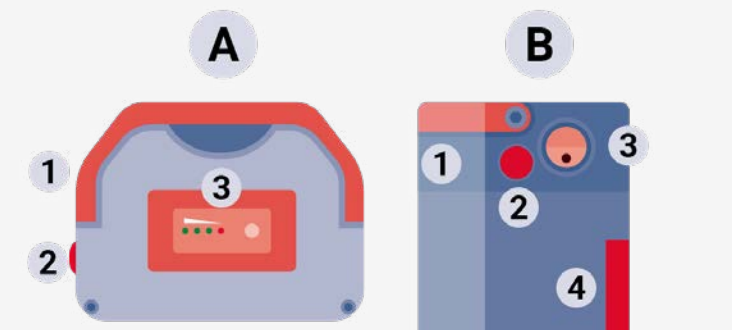


Abb. 88: Description: Jenny Bag

Designation	Description of the
A	View from above
A → 1	Handle
A → 2	On/off switch with status LED
A → 3	Capacity display
B	Right side
B → 1	Handle
B → 2	Charging connection
B → 3	On/Off switch
B → 4	Battery-rail connection

8.3.6. Read out the capacity and charge status of the battery

8.3.6.1. **Introduction**

Please note that due to technical circumstances, reading out the battery charge status can only be an approximation. It is not possible to reliably determine the battery capacity while driving. An exact reading is only possible when the bike is stationary.

In addition, the outside temperature has a physical effect on the capacity of the battery, which can significantly reduce the range at lower temperatures.

8.3.6.2. **Integrated capacity display**

The batteries are equipped with an integrated capacity indicator, which is located either on the top or front. This display can be activated by pressing the corresponding button. As soon as the display is switched on, various numbers of LEDs light up. The number of LEDs that light up provides information about the battery's charge status: the more LEDs that light up, the fuller the battery is.

8.3.6.3. **Sepraretes display**

For more detailed information on the charge status, there is a separate display, which often shows the charge status as a percentage. However, it should be noted that this percentage does not always directly correspond to the actual battery capacity.

8.3.7. Rechargeable batteries with USB socket

Some battery models are equipped with an integrated USB socket. If present, the USB socket is located on the side of the battery. Depending on the model and design, this socket can be used to charge external devices such as smartphones or lights using an appropriate USB cable.

Do not use the USB socket on the battery when it is raining or in a damp environment. Make sure that the plastic cover is always closed when the socket is not in use. Only use the USB socket properly and with suitable cables. Do not connect any devices to the USB socket while charging the battery.

The USB socket does not have overvoltage protection. Do not attempt to charge the battery via the USB socket.

8.3.8. Transport and dispatch

Please note that rechargeable batteries are categorised as dangerous goods. Special country-specific requirements therefore apply to their transport, especially for shipping. It is important to find out about the specific regulations and requirements from your transport service provider before shipping dangerous goods.

The dispatch of defective or damaged batteries is strictly prohibited.

8.3.9. Waste disposal

Please always dispose of rechargeable batteries properly at a municipal collection point. If the battery is defective and therefore potentially hazardous, inform the collection centre in advance and ask them for further specific instructions on safe disposal.

8.4. Power assist device component

8.4.1. Handlebars and stem

8.4.1.1. **Folding handlebars**

The folding handlebar can be folded for transport.

> **Note**
> Make sure that the handlebars are always fully tightened and no more than hand-tight.

8.4.2. Reverse gear

By activating reverse gear, the adaptation device can accelerate against the direction of travel. Reverse gear is activated by a button or switch and remains active until the button or switch is pressed again or flipped. The reverse gear can be equipped with a signalling device.

Warning

The acoustic or visual signalling devices (LED and/or beeper) for reverse gear are usually reliable. Nevertheless, they may fail. In such situations, the reverse gear function remains active. This means that you may have the impression that reverse gear is not activated even though it is.

8.4.3. **Power controller**

The engine power can be regulated via the power regulator, such as the 3-stage switch. At lower levels, the thumb throttle reacts less sensitively than at higher levels, which makes it easier to manoeuvre through narrow passages or indoors, for example.

8.4.4. **Tetra equipment**

8.4.4.1. **Throttle grip**

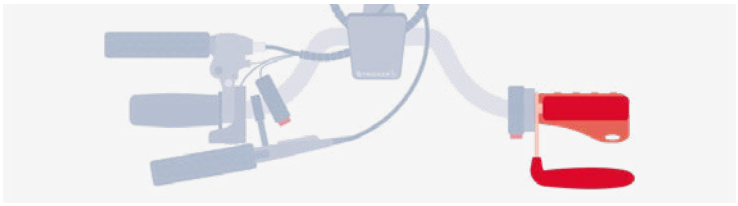


Abb. 89: Example: Throttle grip of the Tetra equipment

The throttle grip of the Tetra equipment holds the hand firmly when driving and operating. This prevents your hands from slipping out while driving and ensures safe operation.

If the hand holder on the throttle grip slips over time, you can reattach it by tightening the screws. To do this, temporarily remove the rubber band covering the screws and tighten them.

8.4.4.2. **Brakes**

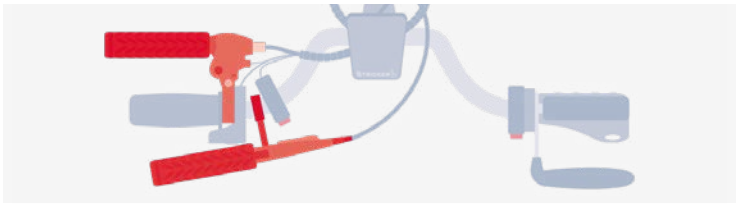


Abb. 90: Example: Brake lever of the Tetra equipment

The Tetra equipment for Power assist devices includes two brakes that can be mounted either on the left or right of the handlebars, but usually one above the other. This makes it easier to operate the brakes even with severely restricted or no hand function. The brakes are activated by striking or resting the forearm or hand on them. The upper brake lever is used for fail-safe operation and is equipped with a locking function. The brake lever underneath enables effective braking power thanks to the hydraulic system.

8.5. **Handbikes component**

8.5.1. **Handlebars**

The handlebars of a Handbikes are made up of the cranks and handles. To steer, simply move them to the left or right. Although steering is intuitive, steering and cranking at the same time can take some practice.

The height and angle of the handlebars can only be changed by adjusting the frame.

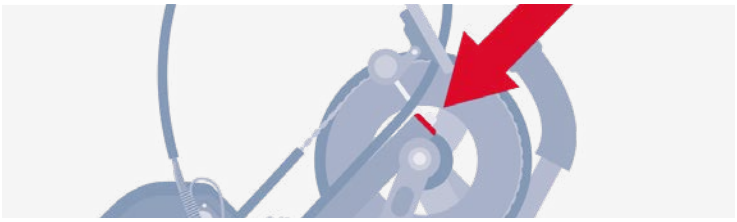


Abb. 91: Adjusting the handlebar rotation

If the handlebars of your Handbikes are twisted, you can realign them by loosening the upper screw on the head tube. After correcting the alignment, tighten the screw again to secure the handlebars.

8.5.2. **Brake lever**

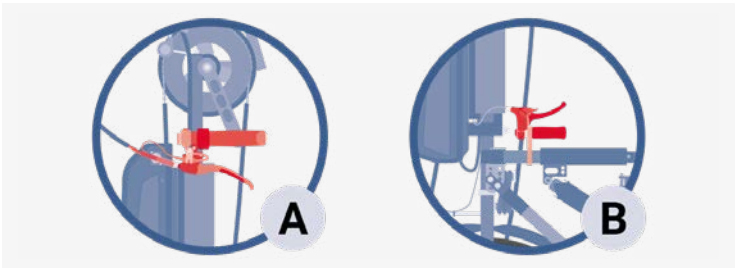


Abb. 92: Position of the brake levers

You will find the brake levers of your Handbikes on the handles (A) or on the frame (B).

Note

Over time, the brake cables on the cranks of your Handbikes can slip and exert tension on the cables. To prevent or correct this, the brake cables should be relieved and brought back into the correct position.

8.5.3. **Coaster brake**

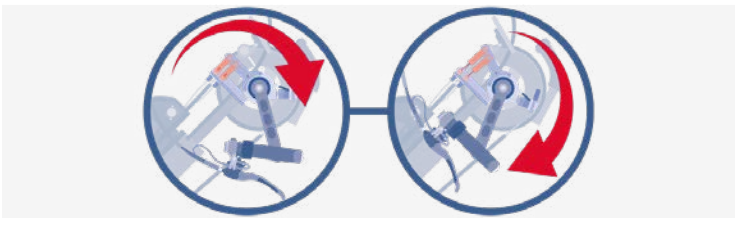


Abb. 93: Coaster brake

The coaster brake is fixed to the cranks. To operate the brake, turn the cranks in the opposite direction to the direction of

travel. To brake lightly, apply light pressure; for heavier braking, apply correspondingly more pressure

8.5.3.1. **Special features of the coaster brake with automatic engagement**

The automatic engagement mechanism is used to temporarily deactivate the coaster brake. This allows the Handbikes to be manoeuvred effortlessly without the wheel locking.

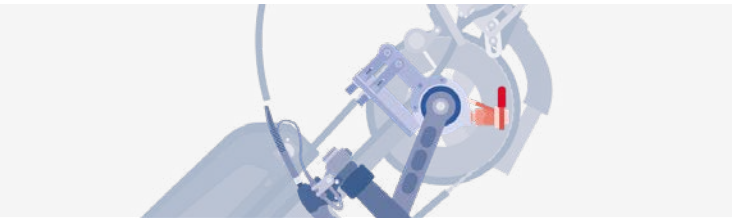


Abb. 94: Automatic engagement of the coaster brake

The automatic engagement is deactivated by turning the crank anti-clockwise. The coaster brake is activated automatically by cranking while riding, at the latest after a full rotation of the crank.

8.5.4. **Crank handle**

In contrast to a bicycle, the cranks on a Handbikes are always mounted in parallel. They are available in different versions which differ in length and width. They can be easily replaced with a crank puller.

8.5.5. **Circuit**

The way you operate the gears on your Handbikes varies depending on the equipment and model.

With twist shifters, you shift gears by turning the handle up or down. Gear levers, on the other hand, have two levers: one for shifting up and one for shifting down the gears. Both mechanical variants indicate the gear currently engaged.

The electric gearstick is controlled via a separate control element and has its own display to show the current gear.

Some models have a rear derailleur (on the running edge) and a front derailleur (on the chainring between the cranks).

8.5.5.1. **Manual switching**

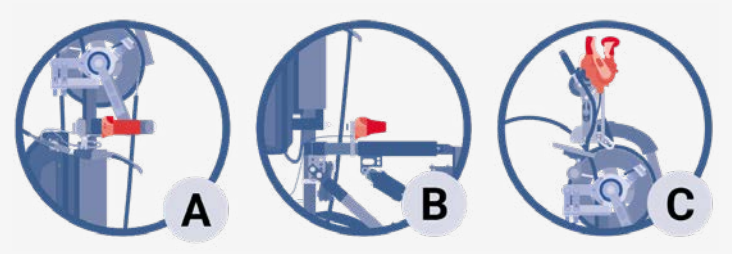


Abb. 95: Position of the gear lever

You will find the gear levers of your Handbikes on the handles (A), on the frame (B) or on the chin control of the Tetra equipment (C).

There are two different gear systems, the twist grip gear system and the gear lever gear system.

The twist shifter can be shifted up and down by turning the handle, whereas the gear lever can be shifted up or down by pressing the respective lever. You can find out which gearstick was used with your Adaptios device in the documentation. The Tetra equipment is always fitted with a gear lever.

8.5.5.2. **Electronic circuit**

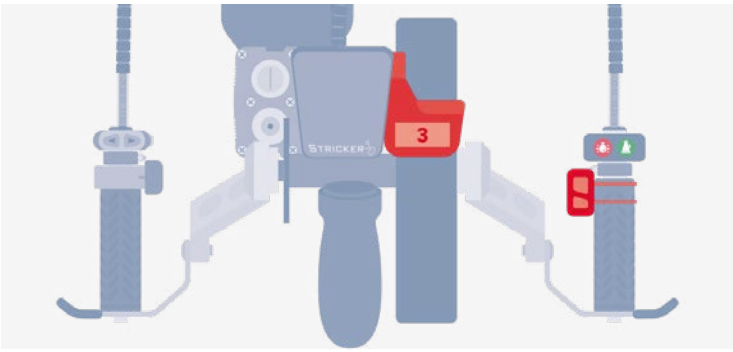


Abb. 96: Electrical circuit

Information

Operating instructions for the components can be found in the scope of delivery or on our website.

Note

The electrical circuit, including the display, is independent of the adaptation device's main power supply and has a separate battery.

It is important to check the battery charge level regularly. If the battery charge level is less than 5 %, the front derailleur may not function properly.

Warning

If the battery of the gearstick is empty, you can no longer change gears.

8.5.5.3. **derailleur gears**

You will find the derailleur of the derailleur system on the wheel. If present, you will find an additional front derailleur on the chainring between the cranks. The derailleur multiplies the available gears.

8.5.5.4. **Readjusting the rear derailleur**

If the rear derailleur does not shift properly, it must be readjusted. We recommend a bicycle workshop or other suitable specialist.

8.5.5.5. **Gear hub**

The gear hub, integrated in the wheel hub of your Handbikes, is low-maintenance and requires no further care apart from regular external cleaning.

8.5.5.6. **Readjusting the gear hub**

If your gear hub is not working correctly, check its settings. There is a small opening on the top of the gear hub in which two fine, coloured stripes are visible. Shift into 4th gear. These stripes should now form a continuous line. If this is not the case, adjust the brake cable so that the two stripes form a uniform line.

8.5.5.7. **Maintenance recommendation**

Clean the derailleur of your Handbikes regularly or with a plastic brush if it is very dirty. We recommend using a special spray oil for bicycle chains for cleaning.

8.5.6. Planetary gearbox (hill reduction)

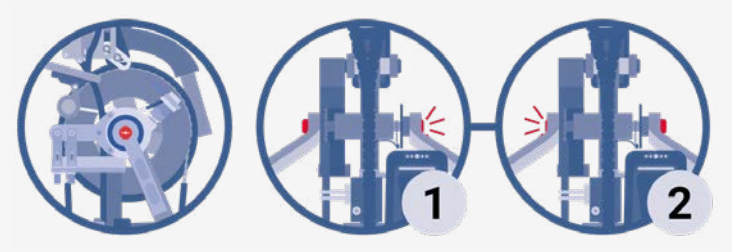


Abb. 97: Planetary gearbox

The planetary gearbox is located in the bottom bracket and enables a significant reduction and thus a doubling of the available gears.

The gear reduction can be activated (1) or deactivated (2) by pressing or lightly tapping the heads of the planetary gears, which are located on the left and right of the crankshaft.

8.5.6.1. **Maintenance recommendation**

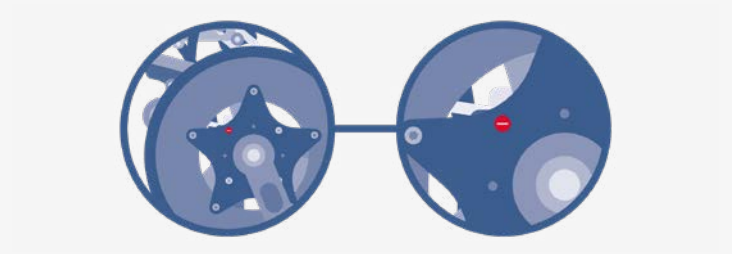


Abb. 98: Oil inlet screw

The planetary gearbox should be oiled once or twice a year. To do this, completely loosen the oil inlet screw (slotted screw) and then put a few drops of bicycle oil or a little fluid grease into the opening.

To distribute the oil or fluid grease, the crank must be moved and the gearbox shifted. The gearbox loses excess oil by itself.

Note

Do not use viscous greases such as bearing grease, as these significantly increase frictional resistance.

Information

Sudden running noises indicate a lack of lubricant, in which case you should re-oil the gearbox as quickly as possible to prevent wear.

8.5.7. Torque sensor

The torque sensor, embedded in the bottom bracket of the Handbikes, detects the force exerted on the cranks and uses it to regulate the motor assistance.

8.5.8. Speed sensor

The speed sensor, mounted on the cranks of the Handbikes, recognises the rotational speed of the cranks and controls the motor assistance accordingly.

8.5.9. Handle

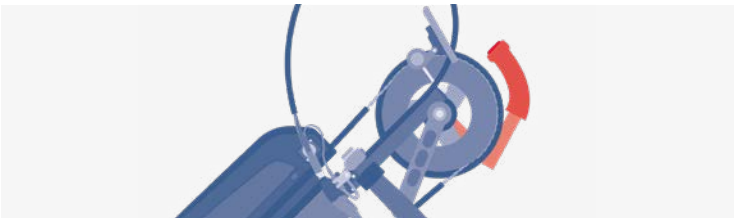


Abb. 99: Handle

The handlebar is used to transport the Handbikes. To do this, hold the Handbike with one hand on the crank, if possible a crank with brake lever, and with the other hand on the handlebar. Steer the Handbikes with your hand on the crank. The other hand holds the Handbike by the top handle so that the attachment stands are lifted off the ground.

If the Handbikes are too heavy for you, you can apply the brake slightly. This increases the rolling resistance but reduces the weight that you have to hold up.

8.5.10. Reverse gear

If your Handbikes are equipped with a reverse gear, activate and deactivate it using the control element provided. Be careful, as the cranks also move in reverse gear, which can pose a risk of injury.

8.5.11. Support levels

With the assistance levels of your Handbikes, the motor power can be adjusted depending on the level selected. At the lowest level, you can either ride without or with minimal motor assistance, while at the highest level you have full motor power at your disposal.

8.5.11.1. **Stepless control (power controller (potentiometer))**

You can use the potentiometer on your Handbikes to continuously adjust the motor power. To get more power from the motor, turn the control in the direction of the arrow. For less motor support, turn it in the opposite direction.

8.5.11.2. **Step control (display)**

You can use the control element on the display of your Handbikes to regulate the assistance levels, with the display showing the currently set level. The levels are labelled numerically, with level 0 as the lowest level of assistance and the highest available number as the strongest motor assistance.

8.5.12. PAS mode

PAS mode is only available on the Smart Dynamic model and is a support for situations such as driving uphill, catching up or when you are exhausted but still want to go full throttle.

PAS mode is activated by cranking and adding the thumb throttle. The speed can then be regulated using the thumb

throttle. To exit PAS mode, simply release the thumb throttle. If the thumb throttle is operated without cranking, PAS mode is not activated.

8.5.13. Chain

Chains are robust and versatile, but require regular maintenance such as cleaning and lubrication for optimum performance.

8.5.13.1. **Maintenance instructions**

Clean the chain regularly and apply lubricant to reduce wear and prolong the service life of the chain.

8.5.14. Toothed belt

Timing belts are durable, low-maintenance and ensure quiet and efficient power transmission without the need for lubrication.

8.5.14.1. **Maintenance recommendation**

Check the timing belt regularly for cracks or damage and clean it with a soft brush or cloth.

Replacement is necessary if there is visible damage such as cracks or significant wear, or if the belt loses efficiency and starts to slip.

8.5.15. Folding mechanism (City Compact)

Abb. 100: Folding mechanism on the Handbikes

The folding mechanism makes the Handbikes easier to store and transport.

8.5.15.1. **Safety note: Position of the toothed belt**

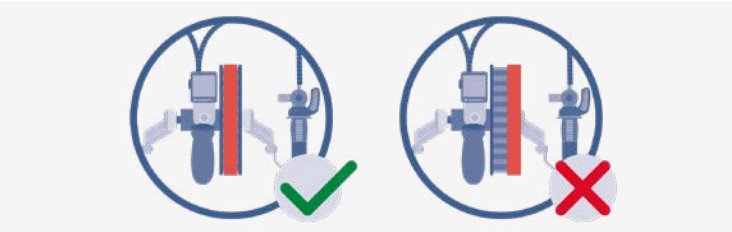


Abb. 101: Correct position of the timing belt

Note

After unfolding, make sure that the toothed belt is correctly positioned on the top and bottom toothed pulleys.

8.5.15.2. **Safety warning: Danger of crushing**

Warning

Make sure that no body parts or objects get caught in the area of the folding mechanism to avoid serious crushing or other injuries.

8.5.15.3. **Open and close folding mechanism**

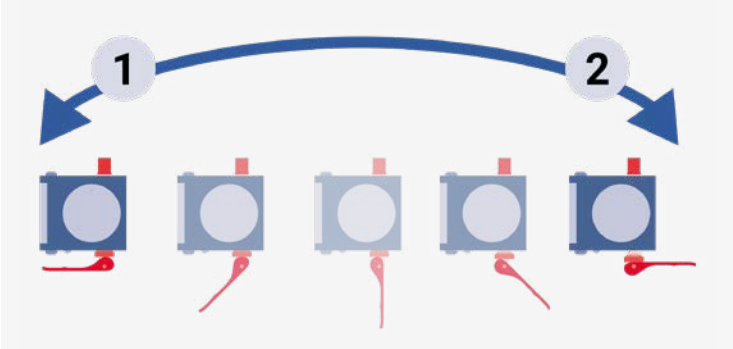


Abb. 102: On top - releasing/tensioning the folding mechanism

To release, the locking lever is moved from position 1 to position 2. It is tightened by moving the lever from position 2 to position 1.

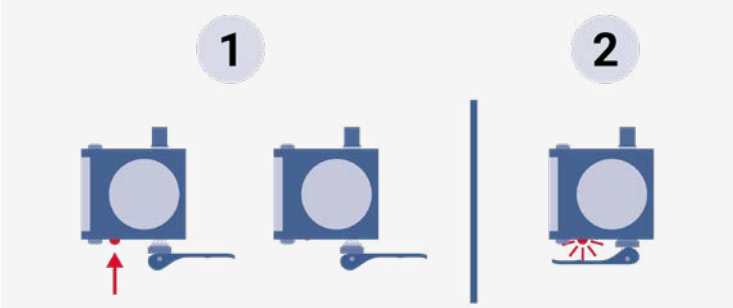


Abb. 103: Release and secure the fuse

To open the folding mechanism, the safety button must be fully pressed in. If the folding mechanism is closed, make sure that this locking pin is fully extended again.

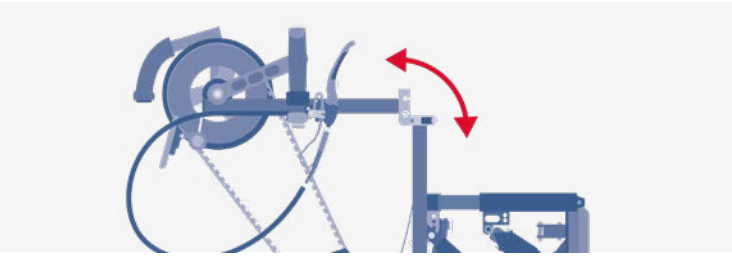


Abb. 104: Folds

The head tube can be folded at the folding mechanism.

8.5.15.4. **Tighten the locking lever**

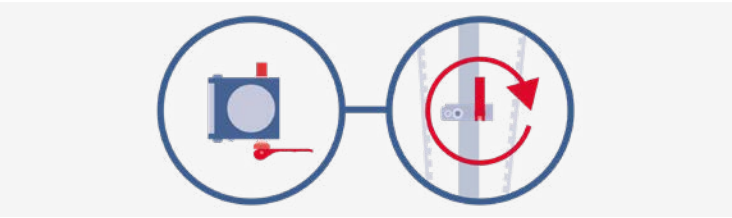


Abb. 105: Locking lever

If necessary, the locking lever can be made tighter or looser by loosening and turning it. It is important that it is tightened so that the folding mechanism is fully secured when closed.

8.5.16. Tetra equipment

8.5.16.1. **Folding chin control (chin switch)**

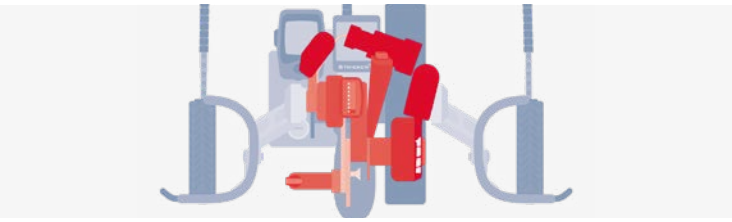


Abb. 106: Chin control from Lipo Smart

The controls of the Tetra equipment on the Handbikes are designed for operation with the chin, and all components are adapted accordingly. It is important that you can use them easily while riding. This can be challenging at first, so we recommend that you practise operating the controls while riding.

8.5.16.2. **Fold down chin control**

Abb. 107: Releasing the chin control

To fold away the chin control, first release the locking pin by turning it 180°.

Abb. 108: Folding down the chin control

Then fold the chin control upwards by 90° and make sure that it engages securely to prevent it from falling down unintentionally.

To fold the control down again, simply press it downwards. Do not forget to re-engage the locking pin by turning it a further 180°. Finally, check that the pin is correctly engaged in the hole.

8.5.16.3. **Adjusting the folding chin control**

The angle and distance of the chin control can be adjusted. Set up the chin control so that you can also use it without restriction while driving.

Abb. 109: Adjusting the chin control's cradle

To do this, slightly loosen the three screws that secure the chin control and folding mechanism to the holder ear. You can now move the chin control to the desired position.

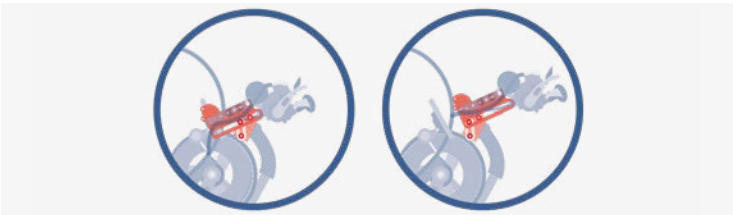


Abb. 110: Adjusting the distance of the chin control

Tighten the screws again as soon as you are satisfied with the setting.

8.5.16.4. **Handles**

The special hand grips of the Tetra equipment ensure that the hands are held securely when cranking, preventing them from slipping out during the ride.

8.5.16.5. **Brakes**

The coaster brake is used when travelling. In addition, there is a lockable brake on the frame of the adaptation device, which is used to lock the device.

8.5.16.6. **Starting aid**

If the starting aid is activated for approx. 2 seconds, it generates an artificial throttle pulse, which ensures that the motor accelerates to a maximum speed of 6 km/h for approx. 3 se-

conds. This makes starting off and turning the cranks much easier, making it possible to start off on inclines, for example.

8.6. Further equipment

8.6.1. Tetra equipment

The Tetra equipment is specially designed for people with limited arm or hand function. affected components are adapted to this limited function.

8.6.2. Double and triple batteries

The adaptation device can only be equipped with double or triple batteries by the manufacturer.

Depending on the model and equipment, switching is either manual, if the control unit has a dedicated switch or a separate switch, or automatic.

8.6.2.1. **Further changeover switches (double battery)**

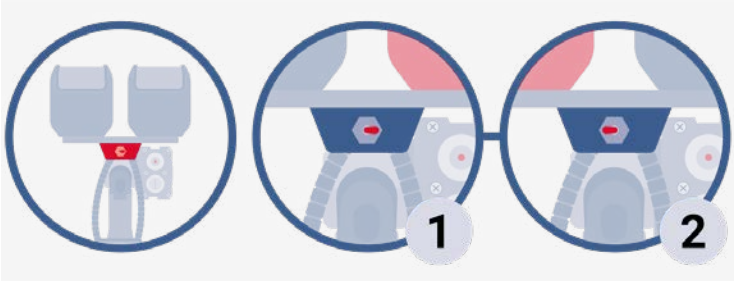


Abb. 111: Example: Battery changeover switch

The switch for the dual-battery configuration on some models is usually located on the head tube near the control unit. The switch changes the power supply to the battery selected by the switch.

The batteries can either be arranged in parallel (e.g. on the Power assist devices) or mounted on the control tube and on the Waldkilo luggage carrier (on the Handbikes or Power assist devices).

8.6.3. Kid and youth equipment

The kid and youth equipment of our adaptation device includes shortened frame parts, smaller clamps and adapted crank lengths that are specially designed for younger users.

This equipment can be converted to standard equipment if required. Please note that special tools may be required when converting the cranks on Handbikes.

8.6.4. Mounting stand

You can read about assembly and adjustment under "Adjusting the kickstand".

8.6.4.1. **Different variants**

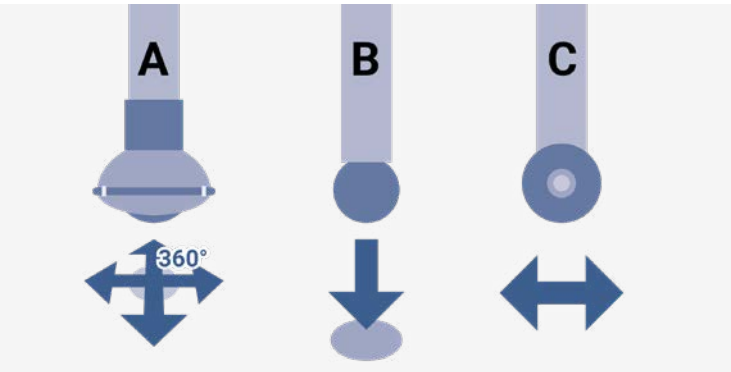


Abb. 112: Different versions of the add-on stands

A	With rolling ball; Can be moved in all directions without restriction, suitable for easy manoeuvring
B	With ball; cannot be moved, holds the adaptation device in place
C	With rolling ball; can be moved forwards and backwards

8.6.4.2. **Different types of fasteners**

Abb. 113: Locking types of the add-on stands

A	Clamp lock; is locked or released by turning
B	Quick-release fastener; can be adjusted by pulling the button

Note

Ensure that the locks are sufficiently tightened or engaged, otherwise there is a risk that they will retract and the adaptor will tip over.

8.6.5. Weights

Not all models and equipment variants of our adaptation device are equipped with weights. If your device has weights and these are not required for certain areas of use or for transport, you can simply remove them from the KLICKfix holder on the device.

Please note that the weights are equipped with a practical carrying strap, which makes it easier to remove and carry them.

Note

Only mount weights on the reinforced holders provided for this purpose. The use of regular holders harbours the risk of breakage during operation, which can lead to injuries.

8.6.6. **KLICKfix holder**

8.6.6.1. **Bracket on the head tube**

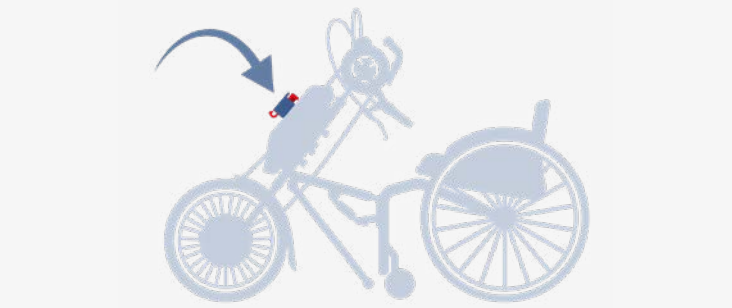


Abb. 114: KLICKfix holder on the head tube

The bracket on the head tube is suitable for attaching accessories such as baskets and bags. This load has a positive effect on traction.

8.6.6.2. **Holder on the corner bracket or side arm**

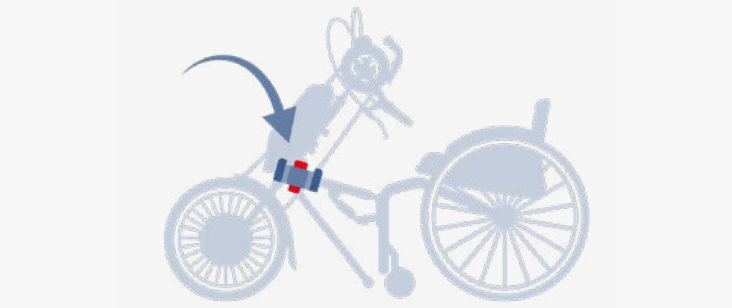


Abb. 115: KLICKfix holder on the corner bracket or side arm

The bracket on the corner bracket or the side arm is suitable for attaching accessories such as baskets and bags as well as other accessories.

Note

When mounting on the corner bracket or on the side of the adaptation device such as the side arms, there is a risk of getting caught on obstacles.

8.6.6.3. **Holder on the fork**

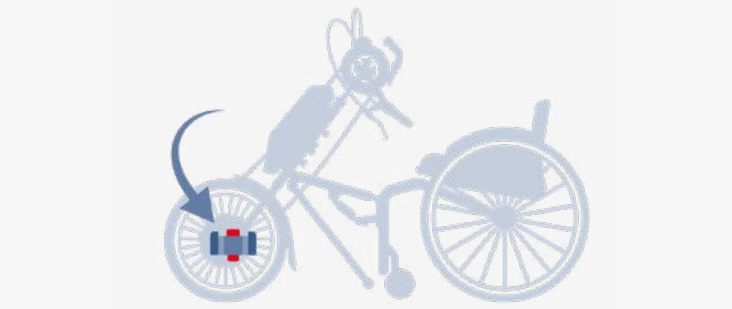


Abb. 116: KLICKfix holder on the fork

The holders on the fork are only intended for mounting weights or, if available in the equipment, batteries.

Note

We advise against attaching accessories other than the weights we sell to the fork. There is a risk of hitting the ground with the accessories or getting caught on obstacles.

8.6.6.4. **Attaching accessories**

Suitable accessories can be easily attached by placing them in the holder and then pressing them firmly into place. You should hear a "click" when the accessory is correctly engaged. Then check the position of the red button to ensure that the accessory is correctly engaged. If the red button is pushed all the way up, the accessory is correctly attached. You should also check whether the accessory can be released again by pulling it.

8.6.6.5. **Removing accessories**

To remove accessories, first press in the red button. Then tilt the accessory and remove it.

8.7. **Accessories**

8.7.1. **Waldkilo luggage carrier**

The Waldkilo luggage rack is an optional accessory and can be fitted or retrofitted to all models with the standard frame. The Waldkilo luggage carrier has little to no direct effect on the steering behaviour, but changes the centre of gravity of the vehicle combination.

The load limit of the Waldkilo luggage carrier is 20 kg.

8.7.1.1. **Optional heavy-duty bracket**

The optional heavy-duty bracket, which can also be retrofitted, is designed for a maximum load of 30 kg.

8.7.1.2. **Mounting and dismounting**

The Waldkilo luggage carrier is attached using the wing nut, which is located on the corner bracket of the adaptation device.

To remove it, loosen the wing nut on both sides, then you can remove the Waldkilo luggage carrier from the holder.

When attaching the Waldkilo luggage carrier, you must ensure that the screws are hand-tightened so that the Waldkilo luggage carrier can no longer be removed from the holder.

8.7.1.3. **Retrofitting**

The Waldkilo luggage rack can be easily retrofitted to suitable frames.

Detailed assembly instructions are included with the Waldkilo luggage rack or are available on our website.

8.7.2. **Luggage carrier**

Adaptation devices can be retrofitted with a luggage carrier. In contrast to the Waldkilo luggage carrier, regular, loaded luggage carriers have an influence on the steering behaviour. Ensure that the load is symmetrical. Ensure proper use.

If you retrofit a pannier rack, observe its installation and safety instructions.

Note

Pay attention to the maximum load of the front axle of 30 kg and the load limit of your adaptation device and wheelchair.

8.7.3. **Folding rear light bar**

The folding rear light bar serves as a holder for a rear light and thus increases your visibility for other road users. It can be folded out when required and folded back in again when not in use.

Always make sure that the lights attached to the rear light bar are working properly. Regularly check whether the batteries or rechargeable batteries are sufficiently charged.

To avoid damage, always fold the rear light bar when it is not in use.

8.7.3.1. **Retrofitting**

The folding rear light bar can be easily retrofitted to suitable frames.

Detailed installation instructions are included with the folding rear light bar or are available on our website.

8.7.4. **KLICKfix accessories**

All accessories with a suitable KLICKfix mounting system can be attached to the KLICKfix holders mounted on the adaptor. Please note that attaching such accessories can affect the steering and riding behaviour. Make sure that you do not exceed the load limit of the respective accessory.

9. **Maintenance, repair, cleaning and care**

9.1. **Introduction**

Carry out maintenance and cleaning regularly to prevent corrosion, defects or damage.

Service wearing parts such as brakes and tyres at least every 500 km or 6 months.

Carry out a full service at least every 2,000 km or 2 years.

Warning

Never apply lubricants, oils or care products to the components of the brakes or the running surface of the wheel! Avoid using lubricants and oils near the brakes and the wheel.

9.2. **Recommended tools and aids**

Subject of the audit	Tools and aids
General	
All models	Phillips and slotted screwdriver
	2 weatherproof cable ties
All models with chain drive	Lubricating grease
Frame	
All models	4 mm, 5 mm and 6 mm hexagon socket, 13 mm open-end spanner
Brakes	
All models with brakes	5 mm hexagon socket
Circuit	
All models with rear derailleur	10 mm open-end spanner
Cranks	
All models with cranks	8 mm hexagon socket
Impeller	
Lipo Lomo, Lipo Lomo Micro, Lipo Lomo Pico, Lipo Smart Para, Lipo Smart Tetra, Lomo 360	21 mm open-end spanner
Smart Dynamic, Smart Wild, Crossbike	21 mm open-end spanner
Crossbike with „Suring“ motor	21 mm and 24 mm open-end spanner
City model series, Sport, Ultra	15 mm open-end spanner

Recommendation

We recommend that you use a ratchet, also known as a reversible ratchet, with a torque spanner and suitable socket spanners. To tighten the screws, use the torque specified in the torque list in the appendices of this manual.

9.3. **Regular maintenance requirements**

Always use the maintenance log for maintenance by yourself or a third party. Keep the maintenance log carefully with the other documents relating to your adaptation device for documentation purposes.

Information

The maintenance log is available on our website for downloading and printing.

9.4. **Cleaning and disinfection**

The adaptor should be cleaned with standard household cleaning agents. Clean the adaptation device with clear fresh water and a sponge or cleaning cloth.

Operating elements such as buttons, thumbwheel or twist throttle as well as screens or other displays and batteries may only be cleaned with a damp, non-wet cloth.

The tyres can be cleaned with a brush.

You can clean the chain with a chain brush or a cleaning cloth. A drop of washing-up liquid in the cleaning water can help to dissolve the old oil. Then rinse the chain with clean water.

Disinfect all usable surfaces and operating elements with disinfectant, e.g. for reuse. Usable surfaces are frame parts that could come into contact with the skin for adaptation, transport or during use, as well as parts of the clamping system such as the tongue of the automatic latch and the screw for tightening.

Note

For applications in the vicinity of salt water, we recommend frequent and thorough cleaning to avoid corrosion.

Ensure adequate care after cleaning.

Warning

Do not use a high-pressure cleaner for cleaning! There is a risk of water penetrating electronic components and destroying them.

Recommendation

For cleaning heavy soiling, we recommend the cleaning agent BIKE Cleaner from Sonax®.

Spray on for effective cleaning and leave to work for 5-10 minutes, do not allow to dry. Then rinse thoroughly with clean water. If necessary, repeat the application and support the cleaning process manually with a soft sponge.

9.5. Care

Maintain the adaptation device regularly, especially if it is used frequently or before storing it.

To prevent corrosion, you can treat the frame and the screws of the adaptor with a maintenance oil.

Grease the chain thoroughly. If necessary, clean it beforehand.

You can use rubber care products for rubber parts.

The tyres can be maintained with a tyre care product, but be very careful not to treat the treads as well.

Note

When caring for components that come into contact with the skin, pay attention to the skin compatibility of the respective care products. If in doubt, do not use the care product on these components.

Recommendation

We recommend SX 90 Plus multifunctional oil from Sonax® or WD-40® for maintaining the frame and screws.

10. Problems and solutions

10.1. More serious problems

10.1.1. Battery fire

10.1.1.1. **Lithium-ion batteries**

Never use water or other liquids to extinguish fires in lithium-ion batteries. There is a risk of explosion. Sand is the extinguishing agent recommended by manufacturers for this type of battery.

10.1.1.2. **Lead gel batteries**

Water, foam or CO2 are suitable for extinguishing lead-gel battery fires. Be aware that these fires can produce dangerous gases. Avoid inhaling these gases at all costs.

10.2. Mechanical faults

10.2.1. Adaptation device knocks or shakes when starting or changing direction

Check whether the nuts of the wheel on the fork are sufficiently tightened.

10.2.2. Adaptation device sinks or wobbles

Check the screw connections of your adaptation device and tighten them.

10.2.3. Brakes squeal

Squealing brakes can have various causes. First check the brake pads; if they are in order, this may indicate a misaligned brake.

Adjust the brake so that it is parallel to the brake disc (disc brake) or the rim (V-brake).

10.2.4. Limited braking effect

If your brakes squeal or make unusual noises, this could indicate worn or glazed brake pads. Glazed pads can often be roughened up again by sanding them with sandpaper. However, if the brake pads are worn, they should be replaced. If the brake pads are not the cause of reduced braking performance, check the tension of the brake cable and the function of the brake shoes. If necessary, readjust the brake.

10.2.5. Non-existent braking effect

When actuating the brake lever, check whether the brake moves accordingly. If no movement can be detected, this could indicate a defective Bowden cable or a damaged hydraulic line. While the Bowden cable can be replaced relatively easily, repairing a hydraulic brake line requires special expertise and tools, which is why the help of specialised personnel should be sought.

10.2.6. Wheel loses air

If your tyre is losing air, there may be a defect in the inner tube. In this case, you should replace the inner tube immediately.

10.2.7. Hose keeps breaking

If your inner tube repeatedly breaks, this could indicate a damaged tyre or a defective or contaminated rim. You should therefore check both the inner tube and the rim and replace them if necessary.

10.2.8. **Motor makes unusual noises, rattles or turns without driving the adaptation device**

Unusual noises or turning without moving may indicate damage to the motor gearbox. In this case, contact your dealer or the manufacturer.

10.3. **Electrical component**

10.3.1. **Control elements do not work**

If the operating elements do not function, either the contact may be loose or the operating element may be defective.

First check the plug connection of the control elements. To do this, follow the cable of the control element to the next plug connection to find the plug. It may help to clean the contacts with contact spray.

If the operating elements still do not work, the affected elements must be replaced. To do this, loosen the plug connection and unscrew the complete element from the handlebars or grips. You may have to temporarily remove other elements from the handlebar or the handle in order to replace the control element.

The affected cable may be wrapped with cable tape. In this case, you must unwind the cable tape up to the affected length, making sure to wind it up again correctly after replacement to protect the cables.

Now install the new control element by plugging the cable into the connector provided and attaching the control element to the correct position on the handlebar or grip.

If the problem persists, you can contact your dealer or the manufacturer.

10.3.2. **Display does not work**

10.3.2.1. **Smart Dynamic**

The display may need some time to start up. Wait approx. 10 to 20 seconds after pressing the switch on. Try this process several times.

10.3.2.2. **Lipo Lomo model series**

If your display does not switch on but the electronic drive continues to work, this may indicate a defect in the battery's BMS.

If neither the display nor the electronic drive functions, this may be due to the following possibilities:

- The battery is empty: Check the charge level of your battery and recharge it if necessary.
- Plug connections are loose or corroded: Check the plug connections of the display. Plug them together again. If this does not help, you can clean the connections with a contact spray.
- The cable or the display is defective: In this case, the entire display must be replaced.

10.3.3. **Battery does not work**

Check that the battery is switched on and charged, and also check that the charger is working. Check the LEDs on the battery and charger.

Check that the battery is correctly engaged in the rail.

If necessary, clean the contacts of the battery rail or the battery, but switch off all components first and do not touch the plug connection with conductive objects or your body.

If the battery still does not work, it is possible that either the fuse or the battery as a whole is defective. Do not attempt to repair the battery. Contact your dealer or the manufacturer.

10.3.4. **Battery does not charge fully**

If your battery no longer charges fully, even over a long period of time, but your battery is fairly new, this indicates a defective BMS. Contact your dealer or the manufacturer.

10.3.5. **Motor weak or off (overheated)**

If the engine is hot, the power is first reduced. If this is not sufficient, the motor may switch off completely to prevent overheating.

10.3.6. **Battery performance drops significantly**

A decrease in battery performance can have various causes.

Low outside temperatures, for example in winter, lead to a drop in performance of 10 % to 15 % due to physical conditions, as the battery performance is linked to the ambient temperature.

If the battery is more than 5 years old or has undergone more than 1,000 charging cycles, this can also lead to a significant reduction in battery capacity.

Another possible cause is incorrect use of the battery, especially if it is regularly fully discharged or used at full power. To maintain the performance of the battery, avoid constantly discharging it by driving below 10 % to 20 % of its capacity.

In addition, a deep discharge, in which the battery is discharged too much, can cause lasting damage and shorten its service life. To prevent this, the battery should be charged regularly and before it is fully discharged.

10.3.7. **Display goes on, no motor function available**

This can have various causes, check the following steps in sequence.

10.3.7.1. **Brake contact**

- The brakes must not be applied
- Disconnect the brake contact on the control unit and check whether the motor function is restored; if so, check the contacts

10.3.7.2. **Motor contact**

- Turn the wheel by hand and check whether the speed on the display changes, if this is not the case, the motor contact could be affected, check it

10.3.7.3. **Display settings GX basic equipment**

- Check the support levels. The three percentage values must be set in ascending order. None of the settings may be lower than the previous one. No value may be set to 0.

10.3.7.4. **Display settings**

- Assist level must not be set to 0.
- In the display settings: Voltage must be set to 48V
- Carry out a factory reset, then adjust the voltage to 48 V if necessary

If the problem persists, contact the manufacturer or your dealer.

10.3.8. **No electrical support on the Handbikes**

First check the support level; you will not receive any support at level 0. Set the level to at least 1 for further error analysis.

10.3.8.1. **Lipo Smart, Smart Wild**

If you are still able to operate your Handbikes using the thumb or chin throttle but receive no assistance when cranking, this may indicate a misaligned sensor.

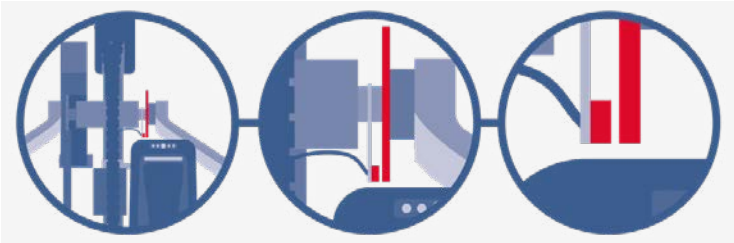


Abb. 117: Sensor position

The sensor is located on the bottom bracket and consists of the actual sensor and a disc, which is equipped with several magnets. The sensor should be 2 mm to 3 mm away from the disc.

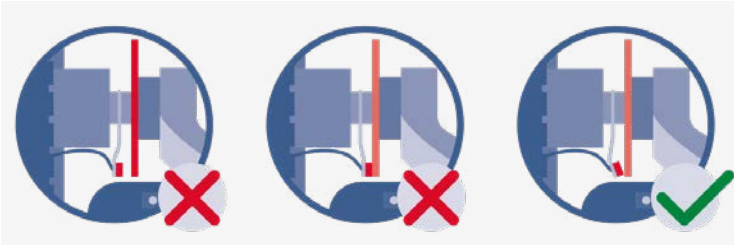


Abb. 118: Examples of sensor position

The sensor must not be too far away or touch the magnetic disc. However, it may be positioned at a slight angle to the disc. You can adjust the sensor to the correct position by bending it.

10.4. **Errors in other functions**

10.4.1. **Reverse gear does not work**

10.4.1.1. **Crossbike**

Check whether the LED on the controller lights up and whether you can hear the beeper. If neither is the case, check the plug connections from the reverse gear button to the controller. Clean them with contact spray. If the problem persists, the button must be replaced completely.

10.4.1.2. **Other model series**

Check whether you can hear the beeper. If this is not the case, check the plug connections from the reverse gear button to the controller. Clean them with contact spray. If the problem persists, the button must be replaced completely.

10.4.2. **Reverse gear cannot be switched off**

The reverse gear button should be replaced.

10.4.3. **USB plug does not charge**

10.4.3.1. **USB socket on the battery**

The battery may not be suitable for charging USB devices.

10.4.3.2. **USB socket on the display - Smart Dynamic**

Switch off the display, then plug in the USB device and switch the display back on. A USB symbol should now appear in the top right-hand corner of the display and the USB function should be activated.

10.5. **Error codes**

10.5.1. **Smart Dynamic, Smart Wild and Crossbike**

Code	Description of the
21	Fault in the power supply
22	Malfunction of the throttle grip or thumb throttle
23	Motor malfunction
24	Fault in the Hall signal on the motor
25	Brake malfunction
30	Disruption in communication

10.5.1.1. **Addition Smart Wild and Crossbike**

Code	Description of the
21H	Fault in the power supply
22H	Malfunction of the throttle grip or thumb throttle
23H	Motor phase fault
24H	Motor connection faulty
25H	Malfunction of the brake cut-off switches
26H	Incorrect battery voltage
30H	Error in the connection to the control unit

10.5.2. **Possible solutions**

If errors occur, it is recommended to restart the system. To do this, switch off the battery, take a short break of at least 10 seconds and then switch it on again.

Code	Solution
21H	1. switch the battery off and on again 2. check cable connections, disconnect and reconnect plug connections if necessary 3. replace motor
24H	1. check cable connections, disconnect and reconnect if necessary
30H	Error appears sporadically: 1. check cable connections, disconnect and reconnect if necessary 2. replace adapter cable Error appears permanently: 1. replace control unit

If there is no improvement or none of the solutions tried are effective, please contact your dealer.

11. **Transport, shelter and storage**

11.1. **Storage and positioning recommendations**

Park your adaptive device in a level, covered area. Switch off the device and any batteries.

Note

Secure your adaptor against theft. Do not leave it unattended and unlocked. Always remove the control key. Always lock the battery rail.

11.1.1. **Long-term storage**

If the adaptation device is to be stored for a longer period of time, it should be kept in a room in which it cannot be damaged by frost or water. Remove rechargeable batteries and batteries.

11.1.2. **Storage of rechargeable batteries**

Batteries should always be stored dry indoors and must not be stored at temperatures below -20°C or above 45°C. The ideal storage temperature is around 20°C. Ensure a maximum humidity of 80%.

For longer storage, you should bring the charge level of the battery to around 50 %. You can minimise the charge level through use or increase it through charging. Check the charge level regularly every three months or so.

Store the battery out of the reach of children or pets. Do not store it in a motor vehicle.

11.2. **Transport**

11.2.1. **Transport in the vehicle or on the trailer**

Always attach the adaptation device properly and adequately. Only attach straps or ropes to rigid, non-moving parts such as the frame. Never lash straps over the chain, gears, brake cables or other cables and lines. Protect the adaptation device from scratches and dents.

11.2.2. **Transport by plane or ship**

Please note that rechargeable batteries are categorised as dangerous goods. Transport by aeroplane or ship is therefore only possible under certain circumstances. Check with your travel company or airline in advance. Make sure you have everything confirmed in writing and have all the necessary documents and correspondence to hand during the journey.

12. **Warranty and guarantee**

Information

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.

Contact your dealer in the event of problems within the warranty or guarantee period.

Complaints due to incomplete or incorrect delivery or recognisable defects must be made in writing without delay, at the latest 8 days after receipt of the goods. Our obligation in the event of justified complaints shall be 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 must be returned to us. Any modification or repair work carried out by the customer or a third party without our prior consent shall invalidate the warranty obligation. The warranty period for adaptation devices is 2 years.

Defects caused by wear and tear or improper handling are not covered by the warranty. Wear parts are, for example: tyres, brake pads, Bowden cables and batteries.

13. **Technical data**

Note

The following information refers to the standard equipment of the respective models as of 23 January 2024. Models with optional equipment may differ.

13.2.2.1. **Notes**

1	Without battery or weights.
2	Depending on frame settings and installation angle.
3	User weight incl. luggage, without wheelchair; note the specifications of the wheelchair, the lower value is the guide value.

4	The maximum speed intended for the model; the actual maximum speed depends on the model and the settings.
5	The charging time may vary; based on a theoretical charge of 10% to 100%.
6	Under optimum conditions (ambient temperature 20 °C, smooth ride, flat route, rider weight approx. 80 kg); Handbikes are assumed to have a motor power of 100 watts including a pedalling power of 100 watts. The actual range may vary considerably.

13.1. Power assist devices

13.1.1. Lipo Lomo Pico

Abb. 119: Lipo Lomo Pico with special equipment

Description of the	Value
General	
Type	Power assist device
Transport weight [1]	From 9.5 kg
Tyres on the wheel	8 inch x 2.0 | 50-110
Height [2]	Approx. 70 cm
Width [2]	Approx. 52 cm
Length [2]	Approx. 75 cm
Maximum range thanks to the electric drive [6]	Approx. 20 km
Primary brake	Bowden cable, disc brake, lockable
Secondary brake	Bowden cable, disc brake
Maximum payload [3]	120 kg
Drive	
Drive	Wheel hub motor
Maximum possible speed in km/h [4]	25 km/h
Speed regulation	Rotary throttle and tap changer
Continuous rated power	250 W
Peak rated power	250 W
Operating voltage	36 V
Battery	
Type	Lithium ion battery
Nominal capacity	8.3 Ah (300 Wh)
Nominal voltage	36 V
Weight	Approx. 2.0 kg
Charging time [5]	Approx. 5 hours
Capacity display	Battery and separate display
Storage temperature range	From + 5 °C to + 30 °C
Discharge temperature range	From - 20 °C to + 40 °C
Lighting and warning devices	
Acoustic warning devices	Horn
Visual warning devices	Front and spoke reflectors
Lighting	LED front light, LED rear light

13.1.2. Lipo Lomo Micro

Abb. 120: Lipo Lomo Micro with special equipment

Description of the	Value
General	
Type	Power assist device
Transport weight [1]	From 12 kg
Tyres on the wheel	12 inch x 2.25 | 62-203
Height [2]	Approx. 55 cm
Width [2]	Approx. 75 cm
Length [2]	Approx. 74 cm
Maximum range thanks to the electric drive [6]	Approx. 25 km
Primary brake	Bowden cable, disc brake, lockable
Secondary brake	Bowden cable, disc brake
Maximum payload [3]	120 kg
Drive	
Drive	Wheel hub motor
Maximum possible speed in km/h [4]	25 km/h
Speed regulation	Rotary throttle and tap changer
Continuous rated power	350 W
Peak rated power	350 W
Operating voltage	36 V
Battery	
Type	Lithium ion battery
Nominal capacity	8.3 Ah (300 Wh)
Nominal voltage	36 V
Weight	Approx. 2 kg
Charging time [5]	Approx. 5 hours
Capacity display	Battery and separate display
Storage temperature range	From + 5 °C to + 30 °C
Discharge temperature range	From - 20 °C to + 40 °C
Lighting and warning devices	
Acoustic warning devices	Horn
Visual warning devices	Front and spoke reflectors
Lighting	LED front light, LED rear light

13.1.3. **Lipo Lomo**

Abb. 121: Lipo Lomo with special equipment

Description of the	Value
General	
Type	Power assist device
Transport weight [1]	From 12 kg
Tyres on the wheel	16 inch x 1.75 | 47-305
Height [2]	Approx. 80 cm
Width [2]	Approx. 55 cm
Length [2]	Approx. 80 cm
Maximum range thanks to the electric drive [6]	Approx. 35 km
Primary brake	Bowden cable, disc brake, lockable
Secondary brake	Bowden cable, disc brake
Maximum payload [3]	120 kg
Drive	
Drive	Wheel hub motor
Maximum possible speed in km/h [4]	25 km/h
Speed regulation	Rotary throttle and tap changer
Continuous rated power	350 W
Peak rated power	350 W
Operating voltage	36 V
Battery	
Type	Lithium ion battery
Nominal capacity	14 Ah (504 Wh)
Nominal voltage	36 V
Weight	Approx. 2 kg
Charging time [5]	Approx. 7 hours
Capacity display	Battery and separate display
Storage temperature range	From + 5 °C to + 30 °C
Discharge temperature range	From - 20 °C to + 40 °C
Lighting and warning devices	
Acoustic warning devices	Horn
Visual warning devices	Front and spoke reflectors
Lighting	LED front light, LED rear light

13.1.4. **Crossbike**

Abb. 122: Lipo Lomo with white frame

Description of the	Value
General	
Type	Power assist device
Transport weight [1]	From 20 kg
Tyres on the wheel	16 inch x 3.00 | 76-406
Height [2]	Approx. 55 cm
Width [2]	Approx. 85 cm
Length [2]	Approx. 85 cm
Maximum range thanks to the electric drive [6]	Approx. 40 km
Primary brake	Bowden cable, disc brake, lockable
Secondary brake	Bowden cable, disc brake
Maximum payload [3]	120 kg
Drive	
Drive	Wheel hub motor
Maximum possible speed in km/h [4]	25 km/h
Speed regulation	Thumb throttle, rotary throttle, steps (switch, display)
Continuous rated power	1,000 W, 1,500 W
Peak rated power	1,000 W, 1,500 W
Operating voltage	48 V
Battery	
Type	Lithium ion battery
Nominal capacity	13 Ah (624 Wh)
Nominal voltage	48 V
Weight	Approx. 2 kg
Charging time [5]	Approx. 1.6 hours
Capacity display	Battery and separate display
Storage temperature range	From + 5 °C to + 30 °C
Discharge temperature range	From - 20 °C to + 40 °C
Lighting and warning devices	
Acoustic warning devices	Horn
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.1.5. **Micro GX**

Abb. 123: Micro GX

Description of the	Value
General	
Type	Power assist device
Transport weight [1]	A 17 kg
Tyres on the wheel	12 inch
Height [2]	Approx. 80 cm
Width [2]	Approx. 55 cm
Length [2]	Approx. 65 cm
Maximum range thanks to the electric drive [6]	Approx. 40 km
Primary brake	Bowden cable, disc brake, lockable
Secondary brake	Bowden cable, disc brake; bidirectional throttle grip, engine brake
Maximum payload [3]	120 kg
Drive	
Drive	Wheel hub motor
Maximum possible speed in km/h [4]	25 km/h
Speed regulation	Thumb throttle, rotary throttle, steps (switch, display)
Continuous rated power	500 W
Peak rated power	1.000 W
Operating voltage	48 V
Battery	
Type	Lithium ion battery
Nominal capacity	13 Ah (624 Wh)
Nominal voltage	48 V
Weight	Approx. 2 kg
Charging time [5]	Approx. 1.6 hours
Capacity display	Battery and separate display
Storage temperature range	From + 5 °C to + 30 °C
Discharge temperature range	From - 20 °C to + 40 °C
Lighting and warning devices	
Acoustic warning devices	Horn
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.1.6. **Lomo GX**

Abb. 124: Lomo GX with 14 inch wheel

Description of the	Value
General	
Type	Power assist device
Transport weight [1]	A 18 kg
Tyres on the wheel	14 inch, 16 inch
Height [2]	Approx. 80 cm
Width [2]	Approx. 55 cm
Length [2]	Approx. 80 cm
Maximum range thanks to the electric drive [6]	Approx. 40 km
Primary brake	Bowden cable, disc brake, lockable
Secondary brake	Bowden cable, disc brake; bidirectional throttle grip, engine brake
Maximum payload [3]	120 kg
Drive	
Drive	Wheel hub motor
Maximum possible speed in km/h [4]	25 km/h
Speed regulation	Thumb throttle, rotary throttle, steps (switch, display)
Continuous rated power	500 W (14 inch), 1,000 W (16 inch)
Peak rated power	750 W (14 inch), 1,250 W (16 inch)
Operating voltage	48 V
Battery	
Type	Lithium ion battery
Nominal capacity	13 Ah (624 Wh)
Nominal voltage	48 V
Weight	Approx. 2 kg
Charging time [5]	Approx. 1.6 hours
Capacity display	Battery and separate display
Storage temperature range	From + 5 °C to + 30 °C
Discharge temperature range	From - 20 °C to + 40 °C
Lighting and warning devices	
Acoustic warning devices	Horn
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.2. **Hybrid Handbikes**

13.2.1. **Lipo Smart**

Abb. 125: Lipo Smart

Description of the	Value
General	
Type	Hybrid Handbikes
Transport weight [1]	From 21.7 kg
Tyres on the wheel	20 inch x 1.75 | 47-406
Height [2]	Approx. 110 cm
Width [2]	Approx. 53 cm
Length [2]	Approx. 55 cm
Maximum range thanks to the electric drive [6]	Approx. 40 km
Primary brake	Bowden cable, disc brake, lockable
Secondary brake	Bowden cable, disc brake
Maximum payload [3]	120 kg
Drive	
Drive	Wheel hub motor, chain drives
Sensor	Speed sensor
Maximum possible speed in km/h [4]	25 km/h
Speed regulation	Thumb throttle and potentiometer
Continuous rated power	250 W
Peak rated power	250 W
Operating voltage	36 V
Circuit type	derailleur gear
Circuit	8 Gear
Chainring	Above: 44 Bottom: 40/34/28/22/18/15/13/11
Battery	
Type	Lithium ion battery
Nominal capacity	14 Ah (504 Wh)
Nominal voltage	36 V,
Weight	Approx. 2 kg
Charging time [5]	Approx. 1.6 hours
Capacity display	Battery and separate display
Storage temperature range	From + 5 °C to + 30 °C
Discharge temperature range	From - 20 °C to + 40 °C
Lighting and warning devices	
Acoustic warning devices	Bell, horn
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.2.2. **Smart Wild**

Abb. 126: Smart Wild with optional extras

Description of the	Value
General	
Type	Hybrid Handbikes
Transport weight [1]	From 26 kg
Tyres on the wheel	20 inch x 2.75 | 70-508
Height [2]	Approx. 110 cm
Width [2]	Approx. 53 cm
Length [2]	Approx. 55 cm
Maximum range thanks to the electric drive [6]	Approx. 50 km
Primary brake	Bowden cable, disc brake, lockable
Secondary brake	Bowden cable, disc brake
Maximum payload [3]	120 kg
Drive	
Drive	Wheel hub motor, chain drives
Sensor	Speed sensor
Maximum possible speed in km/h [4]	25 km/h
Speed regulation	Thumb throttle and power levels
Continuous rated power	250 W
Peak rated power	250 W
Operating voltage	48 V
Circuit type	derailleur gears
Circuit	16 Gear
Chainring	Top: 56/24 Bottom: 32/28/24/21/19/17/15/13
Battery	
Type	Lithium ion battery
Nominal capacity	13 Ah (624 Wh)
Nominal voltage	48 V
Weight	Approx. 2 kg
Charging time [5]	Approx. 1.6 hours
Capacity display	Battery and separate display
Storage temperature range	From + 5 °C to + 30 °C
Discharge temperature range	From - 20 °C to + 40 °C
Lighting and warning devices	
Acoustic warning devices	Bell, horn

Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.2.3. **Smart Dynamic**

Abb. 127: Smart Dynamic with optional extras

Description of the	Value
General	
Type	Hybrid Handbikes
Transport weight [1]	From 24 kg
Tyres on the wheel	20 inch x 1.75 | 70-508
Height [2]	Approx. 110 cm
Width [2]	Approx. 53 cm
Length [2]	Approx. 55 cm
Maximum range thanks to the electric drive [6]	Approx. 65 km
Primary brake	Bowden cable, disc brake, lockable
Secondary brake	Bowden cable, disc brake
Maximum payload [3]	120 kg
Drive	
Drive	Wheel hub motor, chain drives
Sensor	Speed sensor
Maximum possible speed in km/h [4]	25 km/h
Speed regulation	Thumb throttle and power levels
Continuous rated power	250 W
Peak rated power	250 W
Operating voltage	48 V
Circuit type	derailleur gear
Circuit	8 Gear
Chainring	Above: 46 Bottom: 40/34/28/22/18/15/13/11
Battery	
Type	Lithium ion battery
Nominal capacity	13 Ah (624 Wh)
Nominal voltage	48 V
Weight	Approx. 2 kg
Charging time [5]	Approx. 1.6 hours
Capacity display	Battery and separate display
Storage temperature range	From + 5 °C to + 30 °C
Discharge temperature range	From - 20 °C to + 40 °C
Lighting and warning devices	
Acoustic warning devices	Bell, horn
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.3. **Manual Handbikes**

13.3.1. **City 7**

Abb. 128: City 7

Description of the	Value
General	
Type	Manual Handbikes
Transport weight [1]	From 12 kg
Tyres on the wheel	20 inch x 1.75 | 47-406
Height [2]	Approx. 55 cm
Width [2]	Approx. 115 cm
Length [2]	Approx. 100 cm
Primary brake	Coaster brake
Secondary brake	Bowden cable, V-brake, lockable
Maximum payload [3]	120 kg
Drive	
Drive	Chain drives
Circuit type	Gear hub
Circuit	7 gear
Chainring	Above: 38 Below: 24
Lighting and warning devices	
Acoustic warning devices	Bell
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.3.2. **City 11**

Abb. 129: City 11

Description of the	Value
General	
Type	Manual Handbikes
Transport weight [1]	From 12 kg
Tyres on the wheel	20 inch x 1.75 | 47-406
Height [2]	Approx. 55 cm
Width [2]	Approx. 115 cm
Length [2]	Approx. 100 cm
Primary brake	Bowden cable, disc brake
Secondary brake	Bowden cable, V-brake, lockable
Maximum payload [3]	120 kg
Drive	
Drive	Chain drives
Circuit type	Gear hub
Circuit	11 Gear
Chainring	Above: 38 Below: 24
Lighting and warning devices	
Acoustic warning devices	Bell
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.3.3. **City Max**

Abb. 130: City Max

Description of the	Value
General	
Type	Manual Handbikes
Transport weight [1]	From 12 kg
Tyres on the wheel	20 inch x 1.75 | 47-406
Height [2]	Approx. 55 cm
Width [2]	Approx. 115 cm
Length [2]	Approx. 100 cm
Primary brake	Bowden cable, disc brake
Secondary brake	Bowden cable, V-brake, lockable
Maximum payload [3]	120 kg
Drive	
Drive	Chain drives
Circuit type	Derailleur and hub gears
Circuit	24-speed through 3-speed derailleur gears and 8-speed hub gears
Chainring	Top: 38/28/14 Below: 24
Lighting and warning devices	
Acoustic warning devices	Bell
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.3.4. **City Compact**

Abb. 131: City Compact

Description of the	Value
General	
Type	Manual Handbikes
Transport weight [1]	From 13 kg
Tyres on the wheel	16 inch x 1.75 | 44-406
Height [2]	Approx. 55 cm
Width [2]	Approx. 115 cm
Length [2]	Approx. 100 cm
Primary brake	Coaster brake
Secondary brake	Bowden cable, V-brake, lockable
Maximum payload [3]	120 kg
Drive	
Drive	Toothed belt
Circuit type	Gear hub
Circuit	7 gear

Toothed disc	Above: 69 Bottom: 40
Lighting and warning devices	
Acoustic warning devices	Bell
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.3.5. **City Kid**

Abb. 132: City Kid

Description of the	Value
General	
Type	Manual Handbikes
Transport weight [1]	From 10 kg
Tyres on the wheel	16 inch x 1.75 | 44-406
Height [2]	Approx. 45 cm
Width [2]	Approx. 86 cm
Length [2]	Approx. 85 cm
Primary brake	Coaster brake
Secondary brake	Bowden cable, V-brake, lockable
Maximum payload [3]	120 kg
Drive	
Drive	Chain drives
Circuit type	Gear hub
Circuit	7 gear
Chainring	Above: 38
Lighting and warning devices	Below: 28
Acoustic warning devices	Bell
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.3.6. **City Jugend**

Abb. 133: City Jugend

Description of the	Value
General	
Type	Manual Handbikes
Transport weight [1]	From 11.5 kg
Tyres on the wheel	16 inch x 1.75 | 44-406
Height [2]	Approx. 45 cm
Width [2]	Approx. 86 cm
Length [2]	Approx. 85 cm
Primary brake	Coaster brake
Secondary brake	Bowden cable, V-brake, lockable
Maximum payload [3]	120 kg
Drive	
Drive	Chain drives
Circuit type	Gear hub
Circuit	7 gear
Chainring	Above: 38 Below: 28
Lighting and warning devices	
Acoustic warning devices	Bell
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.3.7. **Ultra**

Abb. 134: Ultra

Description of the	Value
General	
Type	Manual Handbikes
Transport weight [1]	From 12 kg
Tyres on the wheel	20 inch x 1.75 | 47-406
Height [2]	Approx. 55 cm
Width [2]	Approx. 115 cm
Length [2]	Approx. 100 cm
Primary brake	Coaster brake
Secondary brake	Bowden cable, V-brake, lockable
Maximum payload [3]	120 kg
Drive	
Drive	Chain drives
Circuit type	derailleur gears
Circuit	24 Gear
Chainring	Top: 38/28/14 Bottom: 40/34/28/22/18/15/13/11
Lighting and warning devices	
Acoustic warning devices	Bell
Visual warning devices	Front and spoke reflectors
Lighting	LED lighting

13.4. Front attachment wheels

13.4.1. Lomo 360

Abb. 135: Lomo 360

Description of the	Value
General	
Type	Front attachment wheel
Transport weight [1]	From 5 kg
Tyres on the wheel	16 inch x 1.75 | 44-406
Height [2]	Approx. 58 cm
Width [2]	Approx. 30 cm
Length [2]	Approx. 65 cm
Maximum payload [3]	120 kg
Drive	
Drive	Driveless

14. Attachments

14.1. Torque list

Designation	Torque in N-m
S1R / S1L	30 N-m
S2R / S2L	30 N-m
S3R / S3L	30 N-m
S4	30 N-m
S3	8 N-m
S3b	8 N-m
S4	30 N-m
KM1	6 N-m
KD1	8 N-m
AS1	6 N-m
AS2	6 N-m
Brake pads	8 N-m for V-brakes 10 N-m for disc brakes
Crank handle	20 N-m

14.2. Further operating instructions

14.2.1. Tachometer centre (ODO)

SUNDING Bicycle Computer, SD-201A (21 functions)

- SPD - Current speed
- ODO - Odometer total (0 - 99999km/m)
- DST - Odometer current journey
- MXS - Maximum speed
- AVS - Average speed
- TM - Past time
- CLK - Clock (12H/24H)
- TMP - Temperature (-10 °C to 70 °C)
- MIN - Minimum temperature
- MAX - Maximum temperature
- SCAN
- CAL (0 - 99999 Kcal)
- FAT (0 - 9999.9 kg)
- Setting - Unit of measurement for speed (km/h, m/h)
- Setting - wheel circumference (0mm - 9999mm)
- Setting - Last value of the odometer / ODO
- Setting - weight of the rider
- Fault memory
- Maintenance instructions
- AUTO - On/Off

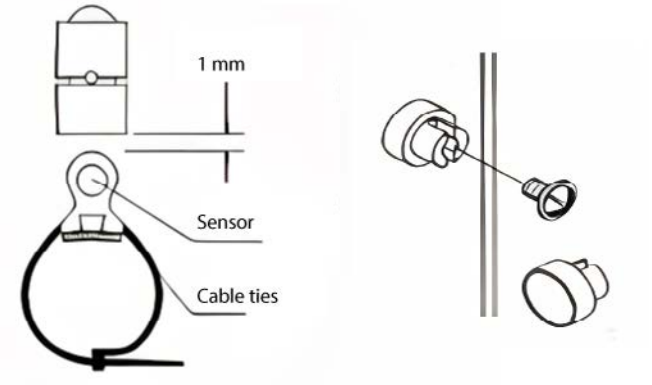
14.2.1.1. **Battery installation**

Remove the battery cover on the underside of the speedometer using a flat-blade screwdriver, insert a CR2032 battery with the positive pole (+) towards the battery cover and replace the cover. If the LCD display shows irregular digits, remove the battery and reinsert it.

14.2.1.2. **Speedometer - sensor and magnet**

Attach the speed sensor bracket to the left fork steerer tube using the spacers to adjust the diameter. Use the cable ties (as shown below) to attach it to the fork.

Position the sensor and the magnet as shown and ensure that the arc of the magnet intersects the alignment mark on the sensor at a distance of 1 mm.



14.2.1.3. **Mounting plate**

Attach the mounting plate with the bracket to the handlebar and adjust the mounting plate with the spacers on the handlebar to hold its position. (Two types of mounting plates to choose from)

14.2.1.4. **Wiring of the sensor**

Route the sensor cable upwards along the fork steerer tube and use cable ties to secure it to the lower part and to the fork crown to prevent it from interfering with the movement of the front wheel.

14.2.1.5. **Computer**

Attach the computer by sliding the device onto the mounting plate until it snaps firmly into position. To remove it, press the button on it in the opposite direction.

To check the correct speed function and sensor alignment, turn the front wheel in speed mode with the computer. Adjust the position of the sensor and the magnet if there is no or a weak response.

14.2.1.6. **Enter the wheel size**

After installing the battery, '2060' is displayed on the screen with one digit flashing. Select the correct wheel circumference from the table below. Use the RIGHT button to advance the digits as required and the LEFT button to confirm and advance to the next digit setting (the circumference is between 0 mm and 9999 mm). Press the LEFT button to switch to km/m mode.

Tyre size	CIRC	Tyre size	CIRC
700c x 38mm	2180	26" x 2.25"	2115
700c x 35mm	2168	26" x 2.1"	2095
700c x 32mm	2155	26" x 2.0"	2074
700c x 30mm	2145	26" x 1.9"/1.95"	2055
700c x 28mm	2136	26" x 1.75"	2035
700c x 25mm	2124	26" x 1.5"	1985
700c x 23mm	2105	26" x 1.25"	1953
700c x 20mm	2074	26" x 1.0"	1913
700c Tubulari	2130	24" x 1.9"/1.95"	1916
650c x 23mm	1990	20" x 1-1/4"	1618
650c x 20mm	1945	16" x 2.0"	1253
27" x 1-1/4"	2161	16" x 1.95"	1257
27" x 1-1/8"	2155	16" x 1.5"	1206
26" x 2.3"	2135		

14.2.1.7. **Setting KM/mile**

Press the RIGHT button to select km/h or miles per hour (m/h). Press the LEFT button to enter the rider weight.

14.2.1.8. **Setting the driver weight**

The default weight is 65 kg. Press the RIGHT button to adjust the flashing weight number according to the rider's weight and press the LEFT button to confirm and continue. Weight range: 20 to 150 kg. Press the LEFT button to go to the maintenance alarm setting.

14.2.1.9. **Setting the maintenance alarm message**

The default value for the maintenance alarm message is 200 km/m and flashes. Press the RIGHT button to select between 200/400/600/800 (km/m). Press the LEFT button to confirm and enter clock mode.

If the TOTAL ODO is greater than the maintenance alarm message you have set, a warning symbol is displayed on the screen to notify the driver. Press the LEFT button to deactivate it.

14.2.1.10. **CLK (clock 12H/24H)**

In clock mode, press the LEFT button for 3 seconds to switch between 12-hour and 24-hour display. Press the LEFT button to switch between the modes. Press the RIGHT button to confirm and let the hour display flash. Press the LEFT button to set the hour. Press the RIGHT button to confirm and let the minute display flash. Press the LEFT button to set the minutes. Press the RIGHT button to finalise the setting and switch to TOTAL DISTANCE mode (ODO).

14.2.1.11. **Setting the last value of the tachometer**

In TOTAL DISTANCE mode (ODO), press the LEFT button for 2 seconds while a digit flashes to set the value of the speedometer. The initial value is 0000.0 km (m). Press the RIGHT button to adjust the digit and press the LEFT button to confirm and continue. (After reinserting the battery, the last

TOTAL distance value stored before reinserting the battery can be entered).

14.2.1.12. **Resetting the kilometre parameters**

In any mode, press both buttons simultaneously for 3 seconds to clear the tyre circumference and other records. The user must reset the tyre circumference, km/m, the total kilometres (ODO) and the clock (CLK) are retained.

14.2.1.13. **Speedometer**

When driving, the speed is constantly displayed on the screen, ranging from 0 to 99.9 km (m) and is accurate to +/- 0.1 km (m).

14.2.1.14. **Comparison display**

When driving, either an up or down arrow is displayed on the screen. The up arrow indicates that the current speed is higher than the average speed and the down arrow indicates that the current speed is lower than the average speed.

14.2.1.15. **Tachometer (Odometer)**

In ODO mode, the total distance is displayed on the screen. The kilometre range is 0.001 to 99999 km (m). The display is reset to 0 if the value exceeds its maximum. Press the RIGHT button to switch to DST mode.

14.2.1.16. **Trip distance**

In DST mode, the trip distance for a journey is displayed on the screen. This distance starts counting when DST is reset to 0. It ranges from 0 to 9999 km (m), and if the range limit is exceeded, it is automatically reset to 0. In DST mode, press the LEFT button for 5 seconds to clear the DST, MXS, AVS and TM records. Press the RIGHT button to switch to MXS mode.

14.2.1.17. **Maximum speed**

In MXS mode, the maximum speed for a journey is displayed on the screen. Press the LEFT button for 5 seconds to delete the MXS, DST, AVS and TM recordings. Press the RIGHT button to switch to AVS mode.

14.2.1.18. **Average speed**

In AVS mode, the average speed for a journey is displayed on the screen. Press the LEFT button for 5 seconds to delete the AVS, DST, MXS and TM recordings. Press the RIGHT button to switch to TM mode.

14.2.1.19. **Time**

In TM mode, the journey time for a journey is displayed on the screen. The time ranges from 0:00:00 to 9:59:59 and starts at 0:00:00 if the range limit is exceeded. In TM mode, press the LEFT button for 5 seconds to delete the TM, DST, MXS and AVS recordings. Press the RIGHT button to enter TMP mode.

14.2.1.20. **TMP (temperature MIN/MAX)**

In TMP mode, the current outdoor temperature is displayed on the screen. The temperature ranges from -10 to 70 degrees Celsius (°C) and is accurate to +/- 0.1 °C. In TMP mode, press the LEFT button for 5 seconds to clear TMP MIN MAX, DST, MXS, AVS. Press the RIGHT button to enter CAL mode.

14.2.1.21. **CAL (calories)**

In CAL mode, the total heat energy the rider consumed calculates from the last restoration of the computer is indicated on the screen. It ranges: 0~99999Kcal. Press the RIGHT button to enter into FAT mode.

14.2.1.22. **FAT (fat)**

In FAT mode, the total fat that the driver has consumed since the computer was last restored is displayed. The range is from 0 to 9999.9 kg. Press the RIGHT button to enter scan mode.

14.2.1.23. **SCAN**

In SCAN mode, the DST, MXS, AVS and TM recordings are displayed one after the other every 4 seconds. Press the RIGHT button to switch to CLK mode.

14.2.1.24. **Hide menu**

In any mode except CLK mode, press the RIGHT button for 5 seconds to put the computer in menu hide mode. In this mode, MIN RPM, MAX RPM, CAL and FAT are not displayed on the screen but continue to operate in the background. In any mode except CLK mode, press the RIGHT button again for 5 seconds to restore these functions.

14.2.1.25. **Sleep mode**

If no signal is entered for 300 seconds, the computer switches to sleep mode, whereby the clock (CLK) is retained. It returns to the previous mode and retains all collected data when a signal is entered or a button is pressed.

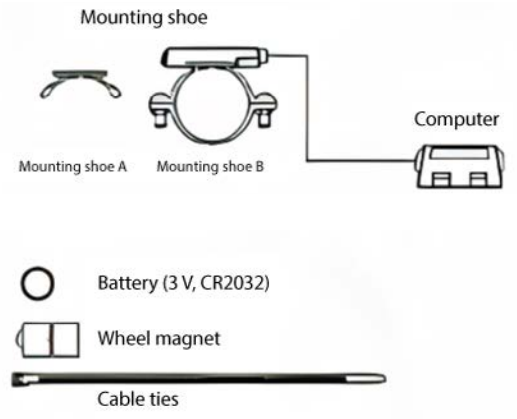
14.2.1.26. **Memory for still image (error analysis)**

In any mode, press the LEFT button to enter the still image memory. Flashing TM data is displayed on the screen. Press the RIGHT button to display the DST, TM, AVS and MXS recordings. Press the LEFT button to exit the mode.

14.2.1.27. **Faults and problems**

Description of the	Solution
No speedometer	Insufficient alignment of magnet and sensor
Inaccurate display	Incorrect input, e.g. incorrect wheel circumference
Slow display response	Temperature exceeds operating limits (0°C~55°C)
Black screen	Too long in direct sunlight, should be moved into the shade
Weak display	Weak or flat battery
Irregular displays	Remove the battery and reinsert it after 10 seconds

14.2.1.28. **Accessories**



14.2.2. **Battery chargers**

Charger for 48 V Li-ion battery, manufacturer: Wu Xi Dpower Electronic Co., Ltd, model: DPLC165V55-M

14.2.2.1. **Features**

This product is an intelligent charger specially designed for charging lithium-ion batteries. It is characterised by:

- Input voltage range: 110-240 V alternating current
- Operating and storage temperature range: 0 to 30 °C
- Low-noise operation
- Protection in the event of a short circuit by immediately switching off the power supply
- Conformity with the RoHS directives of the European Union

14.2.2.2. **Area of application**

The charger is designed for lithium-ion batteries.

14.2.2.3. **Instructions for use**

Place the batteries in the charger in accordance with the instructions and only then connect the device to the power source. During charging, the indicator light is red. It changes to green as soon as the battery is fully charged. Once the batteries are fully charged (green indicator light), disconnect the charger from the power source before removing the batteries.

14.2.2.4. **Troubleshooting**

If the indicator light is not illuminated:

- Check the power source.
- Check the connection of the power cable to the charger.

If these steps do not resolve the problem, please contact the manufacturer. Do not attempt to repair the appliance yourself.

If the charging indicator light is not working correctly:

- Check the compatibility of the inserted batteries with the device.
- Check the compatibility of the inserted batteries with the device.

If problems persist, please contact the manufacturer.

If the charging indicator light remains permanently red:

- Check whether the batteries are damaged.

If the problem cannot be rectified, please contact the manufacturer.

14.2.2.5. **Safety instructions**

The device is not intended to be opened as it is energised. The charger may only be used indoors. Only charge rechargeable batteries. Do not use normal batteries. If problems occur, contact the manufacturer or your dealer.

The appliance is not intended for use by persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children must be supervised while using the charger to ensure that they do not play with it or use it improperly.

KEEP THESE INSTRUCTIONS CAREFULLY - They contain important safety instructions.

Warning

Follow all instructions in this manual to reduce the risk of fire or electric shock.

If the plug does not fit into the socket, use a suitable adapter.

If the mains cable is damaged, it may only be replaced by the manufacturer, its customer service or qualified personnel in order to avoid hazards.

Do not place any objects on the charger during charging.

Do not dispose of electrical appliances as unsorted municipal waste. Use the local collection centres for waste electrical and electronic equipment. Contact your local authority for information on the relevant collection systems. By disposing of electrical appliances correctly, you can prevent damage to the environment and health.

14.3. **EC Declaration of Conformity**

14.3.1. **Power assist device**

STRICKER

EG-Konformitätserklärung für Medizinprodukte
EC Declaration of Conformity

Medical Device Regulation (MDR) (EU) 2017/745

Gültig ab / Valid from 18.03.2024

Kategorie: Elektrische Zuggeräte / Category: Eletric Power Assist Devices

Produkte / Product:

Produktname / Handelsname Productname / Trade Name	UDI-ID	Artikelnummer Articlenumber	Modellnummer Modelname
Crossbike	4062826 3 04 01 0	106072	LipoC
Lipo Lomo	4062826 3 01 01 9	106018	LipoLL
Lipo Lomo Pico	4062826 3 02 01 6	106066	LipoPico
Lipo Lomo Micro	4062826 3 03 01 3	106029	LipoLL12
Lomo GX	4062826 3 01 02 8	106018-3	LomoGX
Micro GX	4062826 3 03 02 5	106029-1	MicroGX

Firma / Company	R & E Stricker Reha-Entwicklungen GmbH Klotzbergstraße 64 77815 Bühl, GERMANY Telefon: +49 7223 72510 E-Mail: info@stricker-handbikes.de
Klassifikation / Classification	Medizinprodukt der Risikoklasse 1 Risk Class 1 Medical Device
Zweckbestimmung / Intended purpose of medical device	Dieses Produkt ist eine abnehmbare Zughilfe für Rollstühle, welche die Fortbewegung des Rollstuhles über Greifreifen ersetzt. Mit Hilfe des Elektromotors können größere Strecken zurückgelegt werden, sowie Steigungen überwunden werden. This product is a detachable power assist device for wheelchairs, which replaces the wheelchair's mobility by using handrims. With the help of the electric motor, longer distances can be covered and slopes can be overcome.
Kennzeichnung / Identification	CE

Wir bestätigen, dass unsere Produkte (Elektrische Zuggeräte und handbetriebene Rollstuhl-Zuggeräte - Stricker Handbikes sowie deren Zubehör) den grundlegenden Anforderungen nach der neuen Verordnung (EU) 2017/745 (MDR) bzw. dem Medizinproduktgesetz entsprechen. Die Dokumentation der Herstellung liegt bei der Firma *R & E Stricker Reha-Entwicklungen GmbH* vor. Die Firma *R & E Stricker Reha-Entwicklungen GmbH* trägt die alleinige Verantwortung für die Ausstellung der Konformitätserklärung.

We confirm that our products (electric power assist devices and hand-operated wheelchair assist devices - Stricker Handbikes as well as their accessories) 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 R & E Stricker Reha-Entwicklungen GmbH. R & E Stricker Reha-Entwicklungen GmbH bears sole responsibility for issuing the declaration of conformity.

Bühl 18.03.2024 Timo Stricker
(Person Responsible for Regulatory Compliance)

14.3.2. **Manual Handbikes**

EG-Konformitätserklärung für Medizinprodukte
EC Declaration of Conformity

Medical Device Regulation (MDR) (EU) 2017/745

Gültig ab / Valid from 08.08.2023

Kategorie: Manuelle Zuggeräte (Handbikes) / Category: Manual Assist Devices (Handbikes)

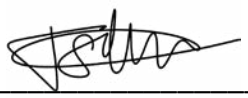
Produkte / Product:

Produktname / Handelsname **Productname / Trade Name**	**UDI-ID**	**Artikelnummer** **Articlenumber**	**Modellnummer** **Modelname**
City	4062826City07H	102097	C7kA
Ultra	4062826Ultra0N8	103095	U24
Sport	4062826Sport0PG	103099	USP
Lomo360	4062826Lomo360M6	106013	Lo360
City Kid	4062826CityKidV8	103504	Cj16
City Jugend	4062826CityJugendJJ	103506	Cj20

Firma / **Company**	R & E Stricker Reha-Entwicklungen GmbH Klotzbergstraße 64 77815 Bühl, GERMANY Telefon: +49 7223 72510 E-Mail: info@stricker-handbikes.de
Klassifikation / **Classification**	Medizinprodukt der Risikoklasse 1 Risk Class 1 Medical Device
Zweckbestimmung / **Intended purpose of medical device**	Dieses Produkt ist eine abnehmbare mechanische Zughilfe für Rollstühle, welche die Fortbewegung des Rollstuhles über Greifreifen ersetzt. Mit Hilfe der Handkurbeln können größere Strecken zurückgelegt werden, sowie Steigungen überwunden werden. This product is a removable mechanical assist device for wheelchairs, which replaces the wheelchair's mobility by using handrims. With the help of the hand cranks, longer distances can be covered and slopes can be overcome.
Kennzeichnung / **Identification**	CE

Wir bestätigen, dass unsere Produkte (Elektrische Zuggeräte und handbetriebene Rollstuhl-Zuggeräte - Stricker Handbikes sowie deren Zubehör) den grundlegenden Anforderungen nach der neuen Verordnung (EU) 2017/745 (MDR) bzw. dem Medizinproduktgesetz entsprechen. Die Dokumentation der Herstellung liegt bei der Firma *R & E Stricker Reha-Entwicklungen GmbH* vor. Die Firma *R & E Stricker Reha-Entwicklungen GmbH* trägt die alleinige Verantwortung für die Ausstellung der Konformitätserklärung.

We confirm that our products (electric power assist devices and hand-operated wheelchair assist devices - Stricker Handbikes as well as their accessories) 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 R & E Stricker Reha-Entwicklungen GmbH. R & E Stricker Reha-Entwicklungen GmbH bears sole responsibility for issuing the declaration of conformity.



Bühl 08.08.2023 Timo Stricker
(Person Responsible for Regulatory Compliance)

14.3.3. **Hybrid Handbikes**

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EG-Konformitätserklärung für Medizinprodukte
EC Declaration of Conformity

Medical Device Regulation (MDR) (EU) 2017/745

Gültig ab / Valid from 08.08.2023

Kategorie: Hybride Zuggeräte (Handbikes) / Category: Hybrid Power Assist Devices (Handbikes)

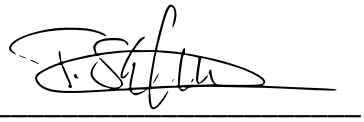
Produkte / Product:

Produktname / Handelsname **Productname / Trade Name**	**UDI-ID**	**Artikelnummer** **Articlenumber**	**Modellnummer** **Modelname**
Lipo Smart, Lipo Smart Tetra	4062826 2 01 02 9	106009	Lipo elsP
Smart Dynamic	4062826 2 05 01 2	106006	LipoSD
Smart Wild	4062826 2 04 01 2	106079	LipoSW

Firma / **Company**	R & E Stricker Reha-Entwicklungen GmbH Klotzbergstraße 64 77815 Bühl, GERMANY Telefon: +49 7223 72510 E-Mail: mp-sicherheit@stricker-handbikes.de
Klassifikation / **Classification**	Medizinprodukt der Risikoklasse 1 Risk Class 1 Medical Device
Zweckbestimmung / **Intended purpose of medical device**	Dieses Produkt ist eine abnehmbare Zughilfe für Rollstühle, welche die Fortbewegung des Rollstuhles über Greifreifen ersetzt. Mit Hilfe des Elektromotors können größere Strecken zurückgelegt werden, sowie Steigungen überwunden werden. Zur Sicherheit ist das Fahrzeug mit Hilfskurbeln ausgerüstet, welche auch eine Fortbewegung mit leeren Akkus ermöglichen. This product is a detachable power assist device for wheelchairs, which replaces the wheelchair's mobility by using handrims. With the help of the electric motor, longer distances can be covered and slopes can be overcome. For safety, the vehicle is equipped with auxiliary cranks, which allow movement even with empty batteries.
Kennzeichnung / **Identification**	CE

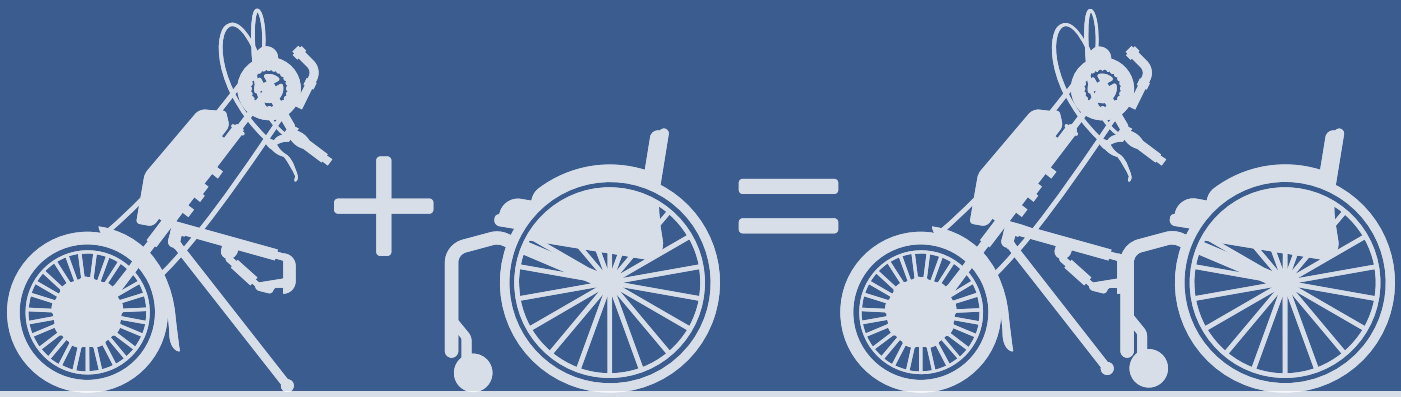
Wir bestätigen, dass unsere Produkte (Elektrische Zuggeräte und handbetriebene Rollstuhl-Zuggeräte - Stricker Handbikes sowie deren Zubehör) den grundlegenden Anforderungen nach der neuen Verordnung (EU) 2017/745 (MDR) bzw. dem Medizinproduktgesetz entsprechen. Die Dokumentation der Herstellung liegt bei der Firma *R & E Stricker Reha-Entwicklungen GmbH* vor. Die Firma *R & E Stricker Reha-Entwicklungen GmbH* trägt die alleinige Verantwortung für die Ausstellung der Konformitätserklärung.

We confirm that our products (electric power assist devices and hand-operated wheelchair assist devices - Stricker Handbikes as well as their accessories) 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 R & E Stricker Reha-Entwicklungen GmbH. R & E Stricker Reha-Entwicklungen GmbH bears sole responsibility for issuing the declaration of conformity.



Bühl 08.08.2023 Timo Stricker
Person Responsible for Regulatory Compliance (PRRC)

STRICKER



Angaben zum Hersteller

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