OPERATING INSTRUCTIONS

Before using mySKATE, make sure to carefully read and follow the SAFETY INSTRUCTIONS and operating instructions!

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Technical changes reserved.

This manual replaces all preceding ones.

All prices on order forms are in
Euro (gross without tax), unless otherwise specified. These apply to all deliveries “ex factory” (EXF), excluding packaging.

You will find our general terms and conditions on our website.

Heidelberg, December 2016

Content

1. Notes and safety instructions

You have purchased mySKATE, REHABILITY'S e-adaptive mini-traction device. Congratulations for having selected it. We appreciate your trust in our product. For more information on how to use it, including photo and video material regarding lifestyle and excursions, check out our homepage (www.rehability.de) or visit our YouTube channel (REHABILITY GmbH).

1.1. Notes

Please read this mySKATE manual thoroughly before using the device. Keep these operating instructions in a safe place. This manual contains relevant information on how to best maintain the traction device, as well as safety features on how best to avoid accidents. It tells you how to keep mySKATE in optimal working condition. Your retailer will know of anything you may need with regard to potential replacements, original spare parts and the right tools to use. With that knowledge he is able to properly advise and follow the maintenance plan recommended for mySKATE, allowing you to enjoy more driving pleasure with maximum safety. This manual is an integral component of the traction device and must be transferred to the new owner if the device is sold. In the context of continuous product improvement, REHABILITY reserves the right to remove, change or add information.

The device meets product requirements, norms and standards of the EU. We certify this in the corresponding EC certificate and declaration of conformity.

Retail advice:

Always include this manual when delivering mySKATE to the buyer. Make sure to draw the attention of the buyer to the safety features. Do not deliver mySKATE without the manual!

1.2. Safety instructions

Important information to avoid accidents:
The following information is for your own safety.
Please carefully read and note before first using mySKATE!

- MySKATE has been approved for a maximum speed of 15 km/h. We strongly advise you not to exceed this speed limit.
- On a downward slope, we recommend that you use a significantly lower speed to slow down safely in every circumstance.
- The maximum load is 100 kg. Make sure to consider the maximum added weight indicated by the wheelchair manufacturer. If this is under 100 kg, then that lower weight applies as the max. load.
- To prevent accidents, when driving and putting on the brakes always keep both hands on the handlebars.
- When driving at dawn and night, always make sure you are using optimal lights. Attach the rear light(s) to the back tubes or onto the rear side cover of the wheel chair. Before driving, always ensure that the batteries for all lights have enough power and ensure they are recharged / replaced in time.

- Avoid driving across kerbs that may be too high to prevent tipping and reduce the danger of tipping. Lower kerbs with a maximum height up to 3 cm must be mounted slowly at a right angle.

- Adjust your driving style to your degree of disability. Particularly on lateral slopes or taking curves go slowly and carefully. For slim wheelchairs with low wheel cambers, the danger of tipping to the side is particularly high. To reduce danger of tipping we recommend installing/ retrofitting a wheel camber of 3° for wider wheel spacing. Beware that these cambers will add to the external width of your wheelchair, (10 mm per 1° on each side) in the lower area.

The following safety features should be checked before each and every trip.

- Regularly check the wheelchair tyre pressures before each trip. The air pressure of drive wheels on the wheelchair = guidelines provided by manufacturer. For exact data and numbers, see the information printed on the built-in tyres. An excessively low air pressure of the wheelchair wheels increases the danger of tipping, particularly in bends!

- Inspect all components, particularly to make sure that all screws are tightly fastened. This especially concerns the four cross-tube screws of the adapter unit. They must be inspected diligently, and if necessary be tightened to prevent twisting. For exact numbers regarding torques, see the attached list.

- Check the handlebar tube and pull tight if necessary.

- Make sure that the drive wheel has been aligned to the centre of the wheelchair. Wheel must be exactly at the centre, in the middle of the drive track of the wheelchair. Deviations of up to 1 cm from the centre are permitted. To verify, this must be measured. A misaligned drive wheel can lead to accidents caused by failure to proceed in a straight line and from vibrations and oscillations.

The safe handling of the wheelchair/mySKATE tandem requires some practice. Especially for beginners, slow and careful driving is imperative. At the beginning, avoid hilly and mountainous terrain and difficult roads until you are fully familiar with how mySKATE functions and operates.

2. Driving Style

Attaching mySKATE to your wheelchair turns your four-wheel wheelchair into a tricycle with all the corresponding advantages and disadvantages. Especially when driving in bends, the three-wheeled driving geometry makes a wheelchair significantly less stable!
It is important to keep this in mind and to get used to operating the tandem carefully.

This means:

Avoid jerky and unpredictable steering movements! How fast you drive MySKATE depends on the traffic situation.

Beware:

- Always drive at controllable speeds, so that you can safely brake at any time, even in unpredictable situations!
- Especially in bends and if your field of view is restricted, drive carefully while leaning your upper body slightly towards the inside of the bend (similar to riding a bike); otherwise the tandem could tip over.
- If your torso feels unstable, then supports in the form of dynamic/static units or back shells must be used for your sides and torso.
- MySKATE cannot be used if your torso is not sufficiently stable.
- Reduce speed when changing from going uphill to moving onto level ground. The same applies when changing from moving on level ground to going downhill.

The following manoeuvres must not be performed:

- Driving across multiple steps and stairs (risk of falling)
- Moving diagonally across kerbs (risk of falling)
- Turning on sloping / steep streets (risk of falling)
- Erratic steering movements (risk of falling).
- Sudden braking in bends (risk of falling)
- Excessive braking on wet surfaces (risk of falling)
- Driving with an activated stand remote release (risk of falling)

A double-sided (back pose) steering enables directional stability.
Negative cambers on the back wheels of wheelchair considerably increase overall stability. A normal dry road surface allows you to manage slopes depending on the ground surface.
To effectively counter any spinning of the drive wheel, you have the option to use a cushioned wheelbase extension (GRV). You may want to have your retailer look into this! You can considerably increase traction by leaning your upper body forward when going uphill or when driving on a wet surface.

3. Intended use

MySKATE is a mini-traction device for wheelchairs. Its purpose is to support its user on longer, primarily flat roads. With its low weight of just 8.9 kg (basic mobile device) and low packaging dimensions it is ideal for travelling, city tours, and for everyday use. Particularly in places where space is limited, such as in shopping centres/malls or in public and administrative buildings, it can be used easily, given its manoeuvrability.

Attach your device quickly and easily to the front of your wheelchair. With the help of the electrically driven wheel, mySKATE can pull a number of manual wheelchairs.

Our product does not alter the basic features and functions of your wheelchair. Any advantages a manually driven wheelchair may offer remain.

MySKATE allows easy commissioning and operation by any wheelchair operator. The device will empower its owner to manoeuvre around in her/his own surroundings more independently. Such added flexibility and mobility cannot be attained by a manually-operated wheelchair.

4. Description of mySKATE

MySKATE MySlave comes with a propulsion unit, which – given its U-shaped frame – is easily adaptable to a variety of wheelchairs. The individually configurable adapter allows the mySKATE to be attached directly to front tubes of wheelchairs with integrated foot supports.

For wheelchairs with removable foot supports, we recommend mounting an additional joint unit onto the wheelchair. This will enable mySKATE to be adjusted more easily to higher positions.

Coupling technology especially designed for mySKATE lifts steering wheels of wheelchairs by approximately 40 mm and then automatically fixes them in place. Your wheelchair will now be capable of being pulled or moved backwards at a reduced speed.

The U-shaped adapter unit is perfectly adjustable to the width of your wheelchair and to the frame angle of the front frame tubes/foot bars of your wheelchair. The tilt of the propulsion unit follows from the required ground clearance (>30 mm) of the wheelchair's steering wheels.

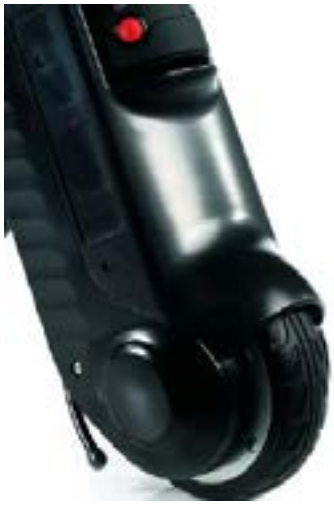
This guarantees individual adaptations to the wheelchair in question.

The multifaceted adjustability of the complete propulsion unit makes the switch to other tested wheelchair models possible.

This may require replacing mounting blocks/main mounts, and in case of width changes, replacing the U-handles.

Given the circumventing frame construction of the adapter unit, the lower legs and feet of the operator are optimally safeguarded and protected.

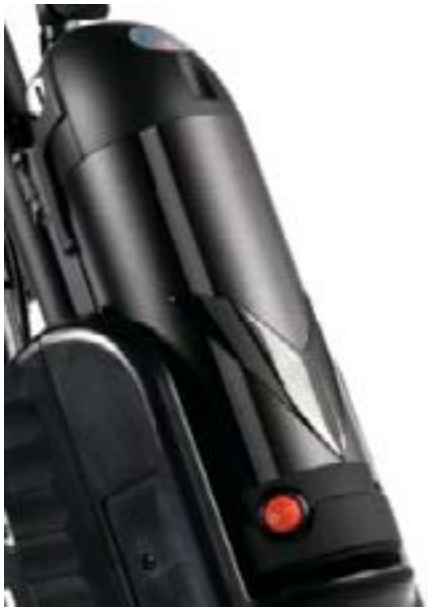
The wheel hub motor is in the drive wheel and is powered by a rechargeable battery pack.



MySKATE has four speed levels and a throttled reverse gear.

Within the individual speed levels you can smoothly manage speeds from 0 to 15 km/h with the help of a rotary throttle handle.

The battery can be removed/replaced without tools, thanks to a special lock. Starting with version MySlave 1.1/ October 2016, the battery must no longer be removed for charging.



5. Attaching / mounting mySKATE to your wheelchair

Once the adapter and coupling unit have been adjusted to the wheelchair, mySKATE can be fitted to any wheelchair in five easy steps.

- Lock parking brake of the wheelchair
- The mounting blocks/main mounts must be aligned in parallel, freely accessible, and free of dirt.
- Place the adapter unit in parallel in front and place it into the insertion clamp up to the selected end point.
- Tighten the locking lever.
- Now attach mySKATE to the ball receptor of the coupling element on the adapter unit.
- Now press and move forward the centred steering knob/stem, and the front wheels will lift up from the ground. Sustain pressure until the lower coupling bolts fully lock in.

6. Removing it from the wheelchair

- Lock the parking brakes of the wheelchair
- Use the handlebar pannier to push mySKATE slightly forward, away from your body; doing so will relieve pressure on the lower locking bolts of the coupling element
- Push forward the release handle / release button of the coupling element
- Activate the stand
- Now release the front wheels of wheelchair onto the ground
- MySKATE can now be fully detached from the wheelchair and stored.
- Finally, fully open the locking lever of the plug-in unit, so that the adapter unit can be removed from the wheelchair

7. Composition of the wheelchair

MySKATE may be mounted and fitted to a wide range of different wheelchairs.
The wheelchairs, however, must be in excellent technical condition.
You can use foldable wheelchairs as well as wheelchairs with rigid frames.
Wheelchairs with rigid frames generally tend to be better equipped to carry more weight, especially with wider seats.

For wheelchairs with removable foot supports, in addition to the rotary slide-in unit we provide rotating plug-in units.

Nonetheless, all models with removable foot supports are generally less suitable. If your wheelchair is not on the list of tested models, it is likely that the manufacturer will individually examine/evaluate suitability/feasibility.

- Both parking brakes of the wheelchair must be in excellent condition and operable at all times to be able to attain additional braking power/capacity when needed.

8. Adjusting mySKATE

See assembly instructions!

9. Commissioning mySKATE

All components must be checked for proper seating and the correct position. Cables must not impair or interfere with steering and must be laid and secured close to the frame. None of these components may be damaged. The battery must be as fully recharged as possible. For your first drive and tour, ideally choose a road with less traffic before you are fully accustomed to handling the electric drive.

9.1 Stand

Activate the stand by pressing the friction lever on the handlebars. This will automatically extend the stand. Place it under load by parking mySKATE. As soon as you lift it up, the stand reverts automatically to its initial position.

9.2 Activating the battery

Activate the device by pressing the ON/OFF button on the display. Select speed level 1. To accelerate, turn the rotary gas handle.

9.3 Speed levels

You can easily select among four speed levels by pressing the selector switch/arrows buttons.

9.4 Reversing / changing the direction of travel

Select the reverse gear by pressing the on/off button plus the arrow button pointing downwards.
The 1st LED light on the left will flash (only if completely stationary).
By pressing the on/off button one more time plus the arrow button pointing upwards (will only start if completely stationary), the direction will be changed again and the wheelchair will head in the forward direction.

MIFA DAS FAHRRAD

Konformitätserklärung
im Sinne der Maschinenrichtlinie 2006/42/EG Anhang II 1A
Original-Konformitätserklärung

Hersteller:	MIFA-Bike Gesellschaft mbH Kyselhäuser Straße 23 06526 Sangerhausen Deutschland
Bevollmächtigter:	Sandy Hille, Projektleiter Kyselhäuser Straße 23 06526 Sangerhausen Deutschland
Bevollmächtigter für die Zusammenstellung der technischen Unterlagen:	Sören Diesterbeck Kyselhäuser Straße 23 06526 Sangerhausen Deutschland
Produkt:	Rollstuhlzuggerät „mySKATE" RZM-017

Hiermit erklären wir, dass das oben genannte Produkt allen einschlägigen Bestimmungen der Maschinenrichtlinie 2006/42/EG entspricht.

Das oben genannte Produkt erfüllt die Anforderungen der folgenden einschlägigen Richtlinien:

- EMV-Richtlinie 2004/108/EG
- Die Schutzziele der Niederspannungsrichtlinie 2014/35/EU werden gemäß Anhang I, Nr. 1.5.1 der Maschinenrichtlinie eingehalten.

Folgende harmonisierte Normen wurden angewandt:

- DIN EN ISO 12100:2010, Sicherheit von Maschinen – Allgemeine Gestaltungsleitsätze Risikobeurteilung und Risikominderung
- DIN EN ISO 13849-1:2008 - Sicherheit von Maschinen - Sicherheitsbezogene Teile von Steuerungen - Teil 1: Allgemeine Gestaltungsleitsätze
- DIN EN 14764:2006 – City- und Trekking-Fahrräder-Sicherheitstechnische Anforderungen und Prüfverfahren
- ISO 7176-21:2009-04 - Anforderungen und Prüfungen der elektromagnetischen Verträglichkeit für Elektrorollstühle und –mobile
- DIN EN 55011:2009 +A1:2010 - Industrielle, wissenschaftliche und medizinische Geräte - Funkstörungen - Grenzwerte und Messverfahren
- DIN EN 55016-2_1-3 - Anforderungen an Geräte und Einrichtungen sowie Festlegung der Verfahren zur Messung der hochfrequenten Störaussendung (Funkstörungen) und Störfestigkeit
- DIN EN 61000 - Elektromagnetische Verträglichkeit (EMV) Teil 3, Teil 4

Sangerhausen, 25.10.2016

Sandy Hille, Projektleiter

FORSEE POWER

Material SAFETY DATA SHEET

Creation Date : 11 April 2006
Last Update : 12 Jan 2015

Product name Lithium-Ion single or multi cells battery packs
Model FBALCO0056 36V 4.3Ah 154.8Wh
Packaging per IATA PI965 Section IA / IMDG PI903

The batteries referenced herein are exempt articles and are not subject to the OSHA Hazard Communication Standard requirement. This safety data sheet is provided as a service to our customers.

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND THE COMPANY / UNDERTAKING

Identification of the substance/preparation
Product name Lithium-Ion single or multi cells battery packs
Use of the Substance/Preparation Battery
Company/Undertaking Identification
Supplier Forsee Power SAS
Valad Parc du Mandinet - Bât
1 - 3 rue des Campanules
77185 - LOGNES, France

Emergency telephone number : +33 (0)1 71 58 70 78

2. COMPOSITION / INFORMATION ON INGREDIENTS

The Lithium-Ion battery is hermetically sealed ; among its components, the following ones could potentially be hazardous upon release.

Product name Lithium-Ion Battery

Hazardous components

CAS-No	Chemical name	Quantity
1307-96-6	Cobalt oxide	< 30 %
1313-13-9	Manganese dioxide	< 30 %
1313-99-1	Nickel oxide	< 30 %
7440-44-0	Carbon	< 30 %
	Electrolyte (*)	< 20 %
24937-79-9	Polyvinylidene fluoride (PVdF)	< 10 %
7429-90-5	Aluminium foil	2 -10%
7440-50-8	Copper foil	2 -10%
	Aluminium and inert materials	5 -10%

Full text of relevant R phrases can be found in Section 15.

Further Information
For information purposes:
(*) Main ingredients: Lithium hexafluorophosphate, organic carbonates.

Mercury content: Hg < 0.1mg/kg
Cadmium content: Cd < 1mg/kg
Lead content: Pb < 10mg/kg

3. HAZARDS IDENTIFICATION

Classification Carcinogenic Category 3R40, Xn , sensitizing R43

Most important hazards Limited evidence of a carcinogenic effect.
Possible risks of irreversible effects. May cause sensitization by skin contact.

Further information The Lithium-Ion is a sealed battery which is not hazardous when used according to recommendations.
Under normal conditions of use, the integrity of the battery casing and security vent are maintained, the ingredients are not expected to pose a significant risk to man or the environment.

The classification above is based on the contents being considered as a preparation in accordance with Directive 1999/45/EC.

4. FIRST AID MEASURES

General advice
Show this safety data sheet to the doctor in attendance.

The information below refers to exposure to the ingredients.
Inhalation
Immediate medical attention is required. Move to fresh air. If symptoms persist, call a physician.

Skin contact
Immediate medical attention is required. Wash off immediately with plenty of water for at least 15 minutes.
Remove and wash contaminated clothing before re-use. If skin irritation persists, call a physician.

Eye contact
Immediate medical attention is required. Remove contact lenses.
Rinse immediately with plenty of water for at least 15 minutes.

Ingestion
Immediate medical attention is required. Gently wipe or rinse the inside of the mouth with water. Give small amounts of water to drink. Do not induce vomiting. Never give anything by mouth to an unconscious person.
Call a physician or Poison Control Centre immediately.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Foam dry powder, carbon dioxide (CO_2), sand.

Extinguishing media which must not be used for safety reasons
Water, water spray

Specific hazards
Risk of receptacle bursting.

Special protective equipment for firefighters
In the event of fire, wear self contained breathing apparatus. Wear personal protective equipment.

Hazardous decomposition products
Lithium compounds, carbon oxides, hydrogen fluoride

6. ACCIDENTAL RELEASE MEASURES

The information below refers to exposure to the ingredients.
Personal precautions
Use personal protective equipment. Avoid contact with skin and eyes.

Environmental precautions
Prevent further leakage or spillage if safe to do so.
Do not allow material to contaminate ground water system.
To avoid risks to man and the environment, comply with the instructions for use.

Methods for cleaning up
Pick up and transfer to properly labelled containers.
Dispose of in accordance with local regulations.

7. HANDLING AND STORAGE

Handling
Do not crush, pierce, short (+) and (-) battery terminals with conductive (i.e. metal) goods, which would end up into excessive heating.
Do not directly heat or solder.
Do not throw into fire.
Do not mix batteries of different types and brands.
Do not mix new and used batteries. Keep batteries in non conductive (i.e. plastic) trays.
Do not disassemble, mutilate or mechanically abuse cells and batteries.

Storage
Store in a cool (preferably below 30℃) and ventila te area, away from moisture, sources of heat, open flames, food and drink. Keep adequate clearance between walls and batteries. Temperature above 70℃ may result in batte ry leakage and rupture. Since short circuit can cause burn, leakage and rupture hazard, keep batteries in original packaging until use and do not jumble them.

Other
Follow Manufacturers recommendations regarding maximum recommended currents and operating temperature range.
Applying pressure on deforming the battery may lead to disassembly followed by eye, skin and throat irritation.
Do not immerse in water.
The Li-ion cells and batteries are not designed to be recharged from external power sources besides specific Li-ion charger models approved by FORSEE POWER.
Connecting to inappropriate power supplies can result in fire or explosion.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls

Engineering measures
Ensure adequate ventilation, especially in confined areas.

Personal protective equipment
Not required under normal use.

The information below refers to exposure to the ingredients.
Respiratory protection
Effective dust mask.

Hand protection
Neoprene gloves (EN 374).

Eye protection
Safety glasses with side-shields conforming to EN166

Skin and body protection
Boots, apron, long sleeved clothing.

Hygiene measures
General industrial hygiene practice.

Environmental exposure controls

The information below refers to exposure to the ingredients
Prevent product from entering drains.
Do not allow material to contaminate ground water system.

9. PHYSICAL AND CHEMICAL PROPERTIE

General Information

Form	battery (sealed unit)	Colour	not applicable	Odour	odourless

Important Health Safety and Environmental Information
not applicable

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Hazardous polymerization
Hazardous polymerization does not occur.

Conditions to avoid
Keep away from heat and sources of ignition.

Materials to avoid
Exposure to moisture.

Hazardous decomposition products
Lithium compounds, carbon oxides, hydrogen fluoride

11. TOXICOLOGICAL INFORMATION

The information below refers to exposure to the ingredients.

Local effects
May cause eye/skin irritation. May cause irritation of respiratory tract.

Long term toxicity
No data available. Avoid repeated exposure.

Specific effects
May cause sensitization by inhalation and skin contact.
Limited evidence of a carcinogenic effect.

12. ECOLOGICAL INFORMATION

If used as directed, and if the integrity of the battery casing and security vent are maintained, the ingredients are not expected to pose a significant risk to the environment.

Mobility
No data available.

Persistence and degradability
Not readily biodegradable.

Ecotoxicity effects
No data available.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products
Dispose of in accordance with local regulations. It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations. Should not be released into the environment.

Contaminated packaging
Not applicable.

Further information
EWC waste disposal No: 200133 - batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries
Never incinerate Li-Ion batteries.
Never dispose Li-Ion batteries as landfill.

14. TRANSPORT INFORMATION

UN-No 3480

ADR/RID					
Class	9	Packing group	II	ADR/RID-Labels	9
Proper shipping name		Lithium-ion batteries, UN 3480			
IMO					
Class	9	Packing group	II	IMO-Labels	9
Proper shipping name		Lithium-ion batteries, UN 3480			
IATA-DGR					
Class	9	Packing group	II	ICAO-Labels	9
Proper shipping name		Lithium-ion batteries, UN 3480			

IMDG code: 9033

EMS (Emergency Schedule Number):
Emergency schedules for FIRE: F-A
Emergency schedules for SPILLAGE: S-I

FORSEE POWER declares that UN Manual of Tests and Criteria, Part III, sub-section 38.3 is met.

Batteries are classified, regulated and shipped as Class 9 Dangerous Goods with required UN specification packaging, labels, marking, shipper's declaration for dangerous goods and emergency response information.

For air transportation the batteries are handled as UN3480 dangerous goods by meeting the IATA Dangerous Goods Regulations 56th Edition Packing Instruction 965, Section IA.

For sea shipment the batteries are handled as UN3480 dangerous goods by meeting the IMDG 2012 edition, P903.

Any person preparing or offering batteries for transport must receive adequate instructions commensurate with their responsibilities.
During the transportation of a large amount of batteries by ship, trailer or railway, do not leave them in the places of high temperatures and do not allow them to be exposed to condensation.

During the transportation do not allow packages to be fallen down or damaged.

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15. REGULATORY INFORMATION

Symbol	T - Toxic Xn - Nocif Xi – Irritant
R -phrases	R10 Flammable. R20/22 Harmful by inhalation and if swallowed. R22 Harmful if swallowed. R34 Causes burns. R40 Limited evidence of a carcinogenic effect. R43 May cause sensitization by skin contact. R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation. R49 May cause cancer by inhalation. R50 Very toxic to aquatic organisms. R53 May cause long-term adverse effects in the aquatic environment.

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16. OTHER INFORMATION

S -phrases	S16 - Keep away from sources of ignition. No smoking S22 - Do not breathe dust S23 - Do not breathe gas S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice S36 - Wear suitable protective clothes S36/37 - Wear suitable protective clothing and gloves S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection. S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

ASSEMBLY INSTRUCTIONS

These assembly instructions describe step-by-step how to fully adapt the traction device to all known adaptable wheelchair models to date.
This is based on the current model, as of 31.10.2016

1. Components:

The following components (included in delivery) are to be used for adaptation

a) For attaching to the wheelchair:

	2x frame clamps + hardened bolt kit (with additional offset positioning holes) Basic version: Circular tube
	2x wheelchair adapters with insertion clamps, AZK01650 (pre-assembled)
	1x set of inserts, measuring 28, 26, 24 and 22 mm (for diameter compensation for the front frame of the wheelchair)
	2x locking levers AZK01655 (pre-assembled)
	2x M6 x 18 Glue at medium strength during assembly
	4x M6 x 20 Lubricate during assembly
	2x Stop rings for tube- and insert stop

b) To install:

	2x 90° tube elbows AZK01662
	1x swivel unit, partially assembled, consisting of • Connection clamp piece AZK01651 • M6 Inbus screws – lubricate during assembly • Base plate AZK01652 • Bolt receiver AZK01653 • Ball socket AZK01649 • Grub screw 2x M6 x 10 – lubricate during assembly

For optional use as appropriate! (to be ordered separately)

	2x joint pieces SLAD 0003 (illustration shows all accessible angles incl. tube end section), incl. two-component adhesives
	Frame clamp for Sopur chairs, ovalised, optional

2. Assembly steps:

1) Measure the front frame diameter of the wheelchair in question with a Vernier calliper.

2) Choose the correct half shell to match the frame diameter of the wheelchair, starting from the frame clamp base diameter measuring 32 mm.

Please note:

To achieve optimal position/accessibility and shortest distance for the user, it is recommended that the attachment be installed as low as possible.

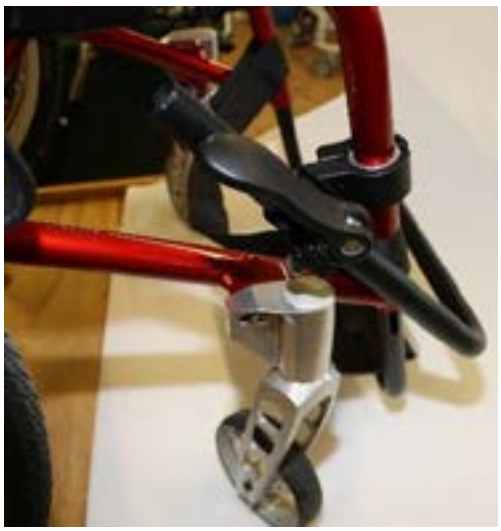
3) Determine whether there is enough space available on the wheelchair's front frame.

Requirements: an installation height of 30 mm, external width of 53 mm from the hole wall (wheelchair tube outer surface), internal width of 8 mm from the hole wall, depth of 50 mm and enough swivel range for the clamping lever with an axle length of 95 mm.

Underlay both of the wheelchair's steering wheels with rear-facing steering forks with 38 to 40 mm MDF or wooden panels approximately 10 cm deep and 70 cm wide.

4) Attach only a frame clamp to the front frame. For this purpose, choose either a vertical or, if necessary, horizontal frame tube.

Tighten these at 17 nm (lubricate only these screws [M6 x 20]).

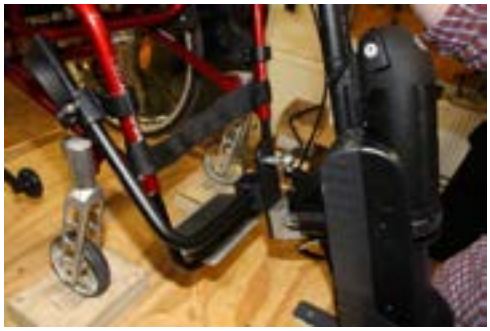


5) Now insert here a tube elbow for assessing the position or the need to use the positioning of the pin.

6) Provisionally mount the swivel unit loosely on the front part of the frame arch so that it can be rotated.

7) Frontally install the traction device for test purposes and now assess its position in terms of:

- Footroom (feet must be completely free/ leg room)
- Contact of the drive wheel with the ground
- The distance of the handlebars to the back of the chair must be within the reach of the user when the user's arms are slightly bent



Please note:

The above points can be achieved by implementing the following changes:

- Move the frame clamps along the vertical/horizontal frame tube upwards/downwards/forwards and backwards
- Alter the angle of the insertion clamp For this purpose, if necessary, hold a frame clamp in each of the two bolt locations for testing (possibly request this from Rehability)

Beware!
Do not press in the hardened bolts until their position has been determined.

- Re-assembling from the vertical frame tube to a horizontal frame tube
- Inserting/removing the tube elbow in the insertion clamp
- Moving the connection clamp piece upwards or downwards onto the base plate of the swivel unit
- In some cases, several points must be worked on at the same time. The distance of the steering wheels from the ground may also need to vary by over +10mm or by the previous distance of 40 mm.

Once you have established the correct position, shorten the end of the tube protruding from the rear of the insertion clamp with an excess length of about 2 cm.

Please note:

If you have not found a suitable mounting position, the optionally available joint pieces must also be used.

8) Now mount the 2nd clamp also on the other side of the frame using a spirit level at the same height.

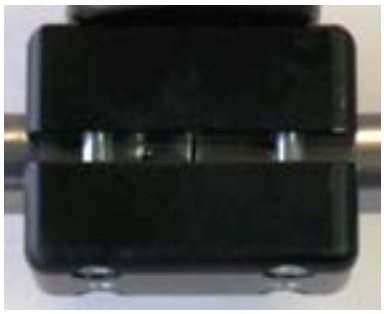
9) Align both frame clamps with the help of an inserted tube elbow at right angles to the front frame.

10) Insert both tube elbows into the insertion clamp and swivel them downwards, so that they overlap. Secure them with two cable ties. Mark the resulting endpoints by creating a 90° angle at the end of each tube.

11) Remove both cable ties and mark the excess on the centre of the two tubes. To achieve sliding tolerance, move each side towards the tube elbows by 2 mm.

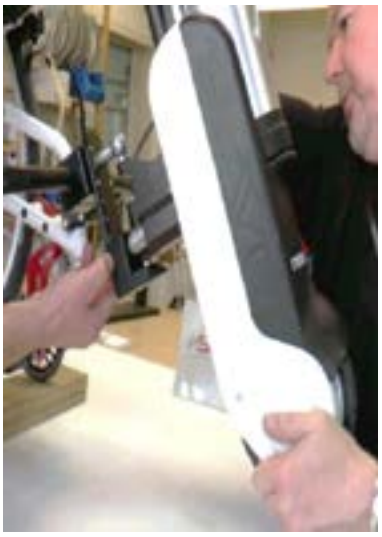
Shorten both tube elbows with a pipe cutter and deburr the resulting cut surfaces inside and out.

12) Push the limiting rings onto the rear parts of the shortened pipe elbows. Insert these into the insertion clamp until it reaches the necessary depth. Opposite the front ends. Mount the swivel unit centrally to the front frame so that it fits loosely but is still adjustable and can be rotated.



13) Now frontally install the traction device. To do so, press the release lever on the steering tube, insert the ball up into the ball socket, push the traction device down into the swivel unit and then release the release lever again.

Now lower the drive wheel until it makes contact with your work surface.



Please note:

Check the position of the handlebar for the individual usability for the user.
Adjustment is possible using different deep slots in the tube frame and subsequent correction of the swivel unit in accordance with the above point.

Positioning and tightening of the limiting rings.

Now tighten the precisely centrally aligned connection clamp piece in the middle of the tube joint with the four lubricated M6 Allen screws in small, uniform increments, mutually cross-wise. Again, be sure that the gap is uniform.
Remove the 40 mm base and check the free rotation of the steering wheels.

14) Making fine adjustments when inserting and removing the adapter unit.

Remove mySKATE and, if necessary, after opening the clamping piece, correct the plane-parallelism or the width of bends using a soft-faced hammer. Finally, tighten all screws cross-wise step by step. Do the same for the grub screws of the swivel unit.

Torques:

- Frame clamps, 10 to 17 nm
- Connection clamp piece, 12 nm
- Round head screws, joints and couplings, 12 nm
- Grub screws, 15 Nm

Please note:

Moisten the adapter brackets that must be inserted with a lubricant to make them easier to insert.

15) Test drive/seats/inserting/removing the adapter bracket.
Sit in the wheelchair and check that the adaptation can be inserted and removed properly, making any necessary adjustments. The width dimensions of some chairs have to be altered when subject to loads. If necessary, adjust the adaptor brackets.

Test the directional stability of the tandem while giving it a test drive. The left-hand front frame dimensions of some chairs are different to their right-hand front frame dimensions due to tolerance fluctuation linking. Correct this by moving the insertion stop rings.

Only when using joint pieces:

The enclosed joint pieces' 4-fold adjustability make installation possible at variable heights, for example with detachable leg supports and/or optional free installation space in the lower, deep-seated frame area, as well as open frame angles >90°.

Produce tube pieces of appropriate length, after determining the distance and position (see point 9), to insert into the insertion units.

Deburr and clean before subsequent adhesion.

Please note:

Thoroughly degrease all cut edges and interior surfaces with metal cleaner or another appropriate cleaner. This is vital for the durability and load capacity of the subsequent adhesion!

Also clean the ends of all 4 joint pieces.

Next, adhere the joint pieces to the tube elbows' insertion units and to the finished tube pieces for the slot.

Use the mixing nozzle for proper mixing. Make sure that there is uniform adhesive application. Insert the bolts by rotating.

The setting time of the mixed adhesive is <5 minutes. Remove dripping adhesive quickly and thoroughly. Ensure the alignment of the previous markings on all components with one another.

Allow all adhesive connections to harden for at least 20 minutes, then test durability.

The joints' M6 panhead screws must be strongly secured with Loctite after the final adjustment.