

mats.



Instructions for use.

mats. The recumbent tricycle that grows with you.




schuchmann®

Many thanks.



Dear Customer

At this point we would like to thank you for placing your trust in our company and for purchasing our product. We ask you to read through the Instructions for use carefully prior to initial commissioning of the product, and to observe them. Please note that guidelines and representations in these Instructions for use may deviate from your product due to differing equipment. We reserve the right to make technical modifications.

Important information!

Ensure that these Instructions for use remain with the product.

Your **schuchmann** Team



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1. Preparation.

1.1 Delivery

On receiving the product, please check it for completeness, lack of faults and any transport damage. Inspect the goods in the presence of your forwarder. Should transport damage have occurred, please arrange for an inventory (determination of the faults) to be made in the presence of the forwarder. Please send a complaint in writing to the specialist dealer responsible.

1.2 Safety measures prior to use

The correct use of the product requires a detailed and careful instruction of the user or the accompanying person. We ask you to read through the Instructions for use carefully prior to initial commissioning of the product, and to observe them. Screws may have loosened during transport. Please retighten all screws to the torques specified in section 7.6 before using them for the first time. It is possible that product parts that get in contact with the skin may heat up in the sun. Depending on the duration and intensity of solar radiation, the surfaces of individual parts can heat up to over 41°C and thus lead to slight burns in the event of direct skin contact. Therefore cover these areas or protect the device from direct sunlight.

1.3 Safe disposal

In order to preserve and protect the environment, to prevent environmental pollution and to improve the recycling of raw materials, please note the disposal instructions in **points 1.3.1 and 1.3.2.**

1.3.1 Packaging

The packaging of the product should be kept for any future transport that might be required. Should you have to return the product for repairs or in case of a guarantee claim, please if possible use the original box so that the product is optimally packaged. Otherwise, separate the packaging materials for recycling according to their classification.



Do not leave packaging materials unattended, as they are a possible source of danger.

1.3.2 Product

At the end of the product lifecycle, recycle the raw materials used in the product according to their nature (see material information under **point 2.1**).

1. Preparation.

1.4 Where to store the Instructions for use

Please store these Instructions for use carefully and ensure that these instructions for use remain with the product in case of re-use. Should you lose the instructions, you can always download an updated version at www.schuchmann.de.

2. Product description.

2.1 Material information

All base frames are made of aluminium, which is non-corroding and powder-coated. The seat is upholstered with Evazote (elastic) and the cover is made of bi-elastic mesh and hard-wearing fabric. All other materials used are protected against corrosion through the use of stainless steel, aluminium, plastic, KTL or powder coating.

2.2 Symbol descriptions

Symbol	Description
	Follow the instructions for use (in accordance with ISO 7010)
	Read the instructions for use (in accordance with ISO 15223-1)
	This is a medical device
	The product complies with the requirements of the MDR
	Manufacturer of the medical device
	Date of manufacture of the medical device
	Warning: risk of getting fingers caught



2. Product description.

2.3 Handling and transport

All important parts, such as the seat, handlebars or also the pedals, can be individually adapted to the individual requirements. Thanks to additional special accessories (see **Point 5**), users can be largely positioned e.g. at the torso or in the torso area / foot area. Recumbent tricycle **mats.** has a disc brake. It is not intended to be carried as it is equipped with wheels. Should you have to carry the equipment due to obstacles, ensure that all moving parts are tightened. Then two people stand at the front and rear of the recumbent tricycle, hold the front wheel and the carrying handles on the rear axle and carry it to the desired location. To transport the recumbent tricycle, reduce all adjustments to their most compact size (seat height, handlebar height, remove accessories etc.).

2.4 Application areas, use according to the intended purpose

The recumbent tricycle **mats.** is a medical device in risk class 1 and was designed for children, adolescents and adults for outdoor use. This tricycle enables users with disabilities to get around independently. They can use the tricycle to cover relevant distances independently and achieve an appropriate speed. The use of the tricycle ensures mobility outdoors and participation in life in the community (integration into a group of people of the same age). Any other use or use beyond this is considered improper use.

The motor skills in relation to

- movement coordination (alternating leg movements, eye-hand coordination, isolated arm and leg movements);
- the targeted development of muscle strength and endurance
- Building trunk stability, promoting head control (the recumbent bike can offer special support and variability here due to the bucket seat and the more reclined position);
- the promotion of balance reactions
- the mobility of the joints (range of motion, ROM), especially of the lower extremities, is supported, whereby the load on the hips is minimised through full extension;

and the patient's cardiorespiratory function is strengthened. These effects support physiotherapy treatment.

2.4.1 Indications

The recumbent bike **mats.** is suitable for children, adolescents and adults with acquired or congenital disabilities due to the following diagnoses:

- Diseases of the central nervous system (e.g. cerebral palsy in spastic, dyskinetic or ataxic form, GMFCS 2-4)
- Diseases of the peripheral nervous system (e.g. such as spina bifida or paraplegia)

2. Product description

- neuro-degenerative diseases (e.g. muscular dystrophies or atrophies caused by metabolic defects)
- genetic diseases (e.g. trisomy 21, Rett syndrome, Kabuki syndrome, Cornelia de Lange syndrome, ...)
- Orthopaedic conditions and resulting deformities (e.g. rheumatism or consequences of trauma to the bony apparatus)
- Mental illnesses that influence movement behaviour (e.g. autistic disorders)

Relevant symptoms (also in other clinical pictures) are:

- limited postural control,
- Restrictions in the range of motion,
- Deformities in the area of the bony apparatus (e.g. spine and/or pelvis),
- Restrictions of the cardiorespiratory system,
- Impaired balance and equilibrium,
- Limitations of strength and endurance,
- uncontrollable swings of movement

The group of people described cannot use standard bicycles or vehicles, even with standard training wheels, due to the movement disorders.

2.4.2 Contraindications

The **mats.** should not be used if:

- There is a risk of danger to yourself or others through the use of a tricycle;
- pain occurs or is aggravated by use; or
- there are other medically recognised contraindications for riding a tricycle.



2.5 Use not in accordance with the intended purpose / warning guidelines

- Correct usage of the product requires precise and careful training of the accompanying person.
- Replace bent handlebars and handlebar stems immediately! Breakage may occur in the event of continued use or repairs.
- The vehicle may only be used on tarmac roads and cycle paths, as well as on paths surfaced with sand, gravel or similar materials. Use on unpaved terrain or on mountain bike trails is not permitted.
- Please observe the "Technical data" in these instructions for use for the maximum permitted patient weight. **Please also observe the warning stickers on the rear axle carriers.**
- Always wear light-coloured and distinctive clothing!
- Always be ready to brake, in particular in steep terrain and sections which are not easy to assess!
- Show consideration for other people who are walking or hiking!
- Do not hang loads on the handlebars and front wheel; this compromises the travel safety.



2. Product description.

- If available: Disc brakes must be run in, the full braking effect is only achieved after a few kilometres/braking cycles.
- Test the fastenings for the seat, pedal cranks, pedals and, if applicable, the wheels regularly.
- For your own safety, we recommend that you always use your vehicle with a helmet. Please ensure in particular that the helmet is of good quality. It should accord at least with the legal regulations or recommendations (standard: EN 1078 or ANS)!
- Check that the brakes, lights and bell function properly prior to each journey!
- Check the screw connections regularly and tighten them to the specified torques if necessary (see **point 7.6**).
- Ensure that your vehicle accords with the legal requirements!
- Only ride if the bicycle is in proper condition!
- Do not use headphones so that you can remain aware of warning sounds.
- In wet conditions, the braking distance of your bicycle will become longer. Therefore, always ensure that your speed remains such that you can stop at any time.
- Although both rear wheels are fitted with grip protection on the inside, there is still a risk of getting your hands caught in the spokes from the outside while riding.
- Before every journey, make sure that the seat is locked and that all screws, especially those for adjusting the seat position, are firmly tightened.

Please also observe the warning stickers on the rear axle carriers.

- Adjustments to the seat (e.g. height, angle, backrest angle adjustment) may only be made when the seat is unloaded.
- The bike may only be used and stored within a temperature range of -10°C to 45°C (10°C to 25°C for electric drives). At excessive temperatures: 1. hydraulic brakes work poorly or not at all, 2. there is a risk of burns from skin contact with the seat ..., 3. bearing and chain greases run off, which leads to loss of function and environmental damage, 4. there is a risk of damage to the battery (see **Point 7.2**).
- The A-weighted emission sound pressure level at the driver's ears is less than 70 dB(A)

2.6 Equipment in accordance with StVZO

For roadworthy tricycles, the following components are specified in accordance with the German Road Traffic Regulations:

- Two brakes functioning independently of one another
- A bicycle bell with a clear ring
- Headlamps, rear lamp with reflectors, large-area reflectors, pedal reflectors, 2 yellow spoke reflectors or white reflecting rings on each wheel, and front reflectors in the design tested for the construction type.

2. Product description.

2.7 Equipment for basic model

- Asymmetrical frame design for easier transfer
- Depth-, angle- and height-adjustable seat, with integrated side guide and angle-adjustable backrest
- Adjustable wheelbase
- 2-point strap
- Aluminium frame with extra-low access point
- Disc brake
- Grip width-adjustable brake lever
- Integrated parking brake
- Light system according to StVZO incl. parking light and reflectors
- Hub dynamo in the front wheel
- Standard pedals
- Triple-adjustable pedal cranks
- Grip protection on the rear wheels
- Removable pennant
- Bell
- Rain cape



2. Product description.

2.8 Accessories

- Headrest
- 4-point strap
- Thorax pelotte pads
- Upper handlebars
- Wide seat
- Seat insert
- Trailer function
- Hand positioning aids
- Hydraulic brakes
- Foot positioning pedals
- Foot pans
- Foot pans with (dynamic) leg guidance
- Ergotec pedals
- Bag
- Grip protection
- Double changeover (rigid gear/neutral)
- 8-gear freewheel brake hub with differential
- Triple changeover (rigid gear/neutral/8-gear with differential)
- E-drive

2.9 Product overview

The Fig. below is intended to show you the designation of the most important components as well as the terms which you will find in these Instructions for use.

Removable pennant

for better safety and visibility.

Lower handlebars

for relayed yet precise steering.

Location

with integrated side guide and angle-adjustable backrest as well as height and seat angle adjustment.

Rear axle
with disc brake.

Integrated grip protection inside

for optimum safety during travel.

Optimal cornering

due to the special frame geometry and low seating position.

Lighting

acc. German Road Traffic Act Regulations.

20" front wheel
with E-drive (optional).

Wheelbase

can be adapted to the body size.

Frame

made from lightweight, highly robust Aluminium with low access level as standard.



2. Product description.

2.9.1 Pennant

The pennant (**A**) shown above is for better visibility of the **mats.** recumbent tricycle and therefore obviously also of the user. The pennant together with the plastic rod (about 160 cm long) is attached to the rear axle.

For easy handling, the pennant can be removed and can easily be re-inserted into the rear axle mount (**B**), which is already mounted on delivery.



2.10 Drive possibilities

The **mats.** recumbent tricycle can be equipped with the following drives:

- Rigid sprocket
- Double changeover (rigid gear/neutral)
- 8-gear freewheel brake
- Triple changeover (rigid gear/neutral/8-gear)

All drive types allow the recumbent tricycle to be ridden in reverse.

2.10.1 Rigid sprocket

The rigid sprocket enables easy pedaling and overcoming the so-called 'dead centre' (apex of the pedaling cycle) thanks to the direct power transmission, and therefore independent and effective riding. This means that braking can take place by actively using the muscles against the pedal movement and therefore cannot be jerky.

2.10.2 Double changeover (rigid gear/neutral)

In addition to the functions of the rigid sprocket, the drive can be uncoupled and thus the passive pedaling can be interrupted, for example for transfer distances.

2.10.3 8-gear freewheel brake hub

The user can stop and start pedaling at will with the 8-gear freewheel hub. The user-friendly 8-gear hub gear system permits switching of gears at a standstill. Switching takes place using the twist grip shifter on the handlebars. The differential is integrated in the 8-gear freewheel brake hub as standard.

2.10.4 Differential

There are two rear wheels on the recumbent tricycle. When the recumbent tricycle turns a corner, the outer wheel turns faster than the inner wheel. This means that the two wheels cannot be directly connected to each other.

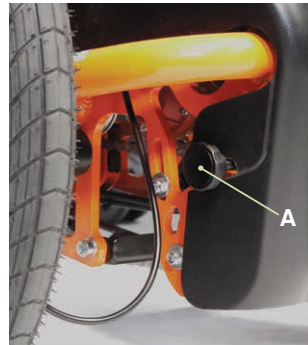


2. Product description.

There are two ways to drive the recumbent tricycle: Either you drive only one wheel and the second simply turns with it, without a connection to the drive. Or you can use a differential and drive both rear wheels equally. This gives you a smooth drive, which is not only an advantage when cornering and accelerating, but also works better on slippery roads.

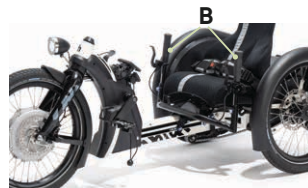
2.10.5 Triple changeover (rigid gear/neutral/8-gear)

This option combines the functions of the above-mentioned drives. Using a switch lever (**A**), it is possible to select between a rigid sprocket, idling hub and the 8-gear freewheel brake hub with reverse option. To do this, pull the level (**A**) out of the recess and allow it to engage in the required position in order to select between the different drive versions. Turned all the way out (to the left) is the setting for the fixed sprocket, the centre position operates the neutral gear and turned all the way to the right activates the 8-gear free-wheel brake hub with reverse option.



2.11 Driving, steering and braking

The recumbent tricycle **mats.** is propelled by the user in a seated position by pedaling. The seat can be individually adjusted for optimal positioning of the user (see **Point 4.1.2**). The recumbent tricycle is steered using the lower handlebars (**B**) by pulling one steering tube towards you and pushing the other away from you at the same time. Optionally, you can also steer using the top handlebars (see **Point 4.1.1**), similar to a standard bicycle. **mats.** is equipped with disc brakes (see **Point 4.2**) on the rear wheels as standard. The rear wheels must be braked using brake handles on the upper and lower handlebars. The recumbent wheel can be braked for transfer and to prevent it from rolling away unintentionally using the parking brake (see **Point 4.2.1**).



2. Product description.

2.11.1 The initial riding attempts

Please remember that, prior to using **mats.** for the first time, you must first practice with an accompanying escort in order to learn corner and brake on the tricycle, as this is where the risk of accidents is greatest. Always ride around curves as slowly as possible. Please also remember that the widest part of your recumbent tricycle is behind you. Therefore, practice using appropriate obstacles so that you learn to estimate the width of your recumbent tricycle better.



Disc brakes must be run in, the full braking effect is only achieved after a few kilometres/braking cycles.

2.12 Transfer

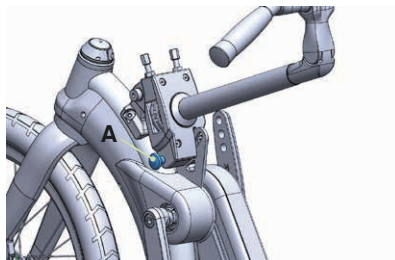
The frame geometry is optimised for transfer thanks to the asymmetry and low access point. Please note the following procedures and instructions for the different steering variants (see **Point 4.1.1**).

2.12.1 For use of the lower handlebars

- Upright positioning in front of the seat edge from the left vehicle side
- Simple seated movement in the recumbent tricycle seat
- Lift right leg over the frame
- Position the feet on the pedals
- Hands on the lower handlebar

2.12.2 Use of the upper handlebars

- Release the steering bar at the front lock (**A**) and fold it forwards and upwards
- Upright positioning in front of the seat edge from the left vehicle side
- Simple seated movement in the recumbent tricycle seat
- Lift right leg over the frame
- Return the steering bar to its original position and ensure that it engages correctly
- Position the feet on the pedals
- Hands on the handlebars

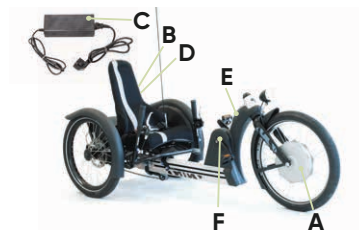


3. Electric drive.

3.1 Components

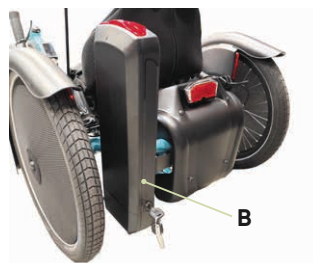
3.1.1 Engine

The **mats.** is equipped with a brushless electric motor (**A**) as its power source. This provides both strong torque during continuous operation and considerable peak torque (e.g. when starting off). Mechanical losses are negligible, as the motor is designed without a gearbox.



3.1.2 Battery and charger

The battery (**B**) serves as the power source for the "DirectPower" drive system. Its high capacity ensures maximum performance and range. A suitable charger, including a cable (**C**), for charging the battery from the mains is included with the **mats.**



3.1.3 Control housing and control system

The electronic control unit is, in a sense, the brain of the drive system. Its role is to analyse all signals and control the motor in accordance with the set parameters so that it delivers the required power. The plastic control housing (**D**) provides reliable protection for the control unit against water and moisture, as well as against impacts and similar stresses.

3.1.4 Display

The display (**E**) together with the operating unit is the control centre of the drive system. For example, you can select the level of assistance or recovery and make all other settings. In addition, you will receive all the required information about the operating status of the system, the distance and the range. When using the top handlebars, the display is attached to the upper handlebar. When using the lower handlebars, the display is mounted on the frame in front of the user.

3.1.5 Torque sensor

The torque sensor (**F**) is integrated into the bottom bracket and is completely concealed within it. It transmits signals relating to pedalling torque, cadence and the direction of pedalling to the control unit. The torque sensor is completely maintenance-free and requires no adjustment whatsoever.

3. Electric drive.

3.2 Lithium-ion battery

The battery is particularly lightweight, yet has a very high charge capacity. Proper charging, along with protection against deep discharge and overheating, significantly helps to extend its service life. A charge controller designed to meet all these requirements is therefore already integrated into the charger supplied. This ensures optimal and safe operation. Consequently, only this charger should be used to charge the battery.



Risk of fire

Charging the battery incorrectly can cause it to overheat. This could result in a fire.

- Only the charger supplied with the unit must be used to charge the battery. The charger is intended for indoor use only.
- Before connecting the charger to the mains, you must check that the mains voltage matches the charger's rated voltage. The charger's rated voltage is indicated on the rating plate on the back of the unit.
- Only charge the battery in a dry, non-flammable environment and, if possible, do not leave it unattended.

Mechanical damage to the battery or charger can lead to malfunctions and short circuits. This could result in a fire!

- Any tampering with the battery casing or the charger is prohibited.
- Replace a damaged battery immediately and dispose of it properly.



Risk of electric shock

A charger with a damaged mains plug or power cable can cause an electric shock.

- Never connect damaged mains plugs or power cables to the mains.
- Replace damaged electrical assemblies and cables immediately.
- Under no circumstances should water or moisture be allowed to enter the charger. If water has entered the charger, disconnect it from the mains immediately and have it checked by your specialist dealer.
- If there is a sudden change in temperature from cold to warm, condensation may form on the charger. In such cases, wait until the charger has reached the temperature of the warm room before connecting it to the mains. Store the charger in the same place where it is used.
- The charger must only be used to charge the battery supplied. Any other use of the charger is not permitted.



3. Electric drive.

3.2.1 Charging

The battery should be charged before first use. To do this, use the charger (A) supplied with the tricycle, which has a built-in charge controller. Charging can be carried out either whilst the battery is still attached to the tricycle or separately, with the battery removed.



Once the battery is fully charged, the charge controller automatically switches to trickle charging. The battery can therefore remain connected to the charger indefinitely. This has the advantage that the battery is always fully charged. The battery can be used with the drive at any time, even if charging has not been fully completed. However, the range achievable with a fully charged battery will not be reached in this case.



To ensure the correct polarity during charging, the socket and plug are designed to prevent reverse polarity, meaning they can only be connected in one way. This ensures the correct polarity. Never attempt to force the charging plug into the charging socket in a different orientation!

The following ambient temperatures must be maintained to ensure the battery functions correctly:

Operating mode	Operation	Charging	Storage
Temperature range	-20°C to 60°C	0°C – 45°C	-10°C to 35°C

Notes

- Unlike other batteries, the lithium-ion battery has no ‘memory effect’ whatsoever. This means it does not need to be completely flat before recharging. In fact, it is actually beneficial for the battery’s lifespan if the charging cycles are short (i.e. if it is recharged immediately after each use).
- The ambient temperature during charging should not be below 0°C or above 45°C. Charging outside this temperature range reduces the available battery capacity and thus the range. When outdoor temperatures are below freezing, it is advisable to charge the battery in a heated room. However, direct sunlight and proximity to heating sources must be avoided.
- Before prolonged periods of inactivity, e.g. during the winter, the battery must be fully charged and then stored in a dry, frost-free place. Before putting the device back into use, fully recharge the battery first.
- The battery performs best at room temperature.
- During long journeys at high engine speeds, the battery may become

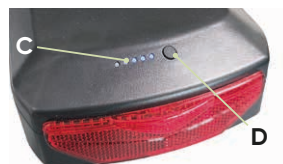
3. Electric drive.

very hot. An internal temperature monitoring system prevents charging if the temperature is too high. In such cases, the charger can remain connected. Charging will resume automatically once the battery has cooled down sufficiently. Cooling down can take up to an hour, for example after a long drive uphill.

Charging process

To charge the battery pack, please follow these steps:

- First remove the dust cap (A) from the charging socket.
- Then connect the charger to the mains and plug the charging cable (B) into the battery's charging socket.
- The LEDs of the charge level indicator (C) start to flashing.



Battery pack charging status when charging:

LED status	Battery status
All 5 LEDs flash in sequence and then go out together	The battery is charging; the number of LEDs that light up in succession indicates the amount of charge already accumulated
All LEDs are permanently off	Charging complete, battery is 100% charged

LED status	●●●●●	●●●●○	●●●○○	●●○○○	●○○○○
Battery pack status	≤ 100 %	< 80 %	< 60 %	< 40 %	< 20 %

You can check the battery charge level at any time, even when the battery is not charging. To do this, press the button (D) to the right of the indicator LEDs. A number of LEDs will light up to indicate the current charge level.

Charging time:

It takes approximately 8.5 hours to fully charge an empty battery.



3. Electric drive.

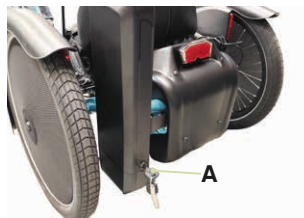
3.2.2 Insertion and removal

To insert the battery, slide it along the guide rail from the rear into the compartment beneath the basket until you hear it click into place.



Always remove the key before setting off.

To remove the battery, please turn the key (A) clockwise as far as it will go and hold it in this position. This will unlock the latch. You can now release the battery from the rear handle bar and pull it backwards out of the holder.



Danger due to unexpected engine activity

The motor may start up unexpectedly when the drive system is switched on after work has been carried out on the tricycle. This could result in injury.

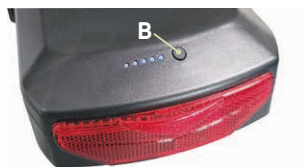
- Do not reinsert the battery until the system has been fully assembled.
- When putting the tricycle back into service after assembly or repair, position it so that the drive wheel can turn freely.

3.2.3 Service life

The manufacturer of the drive system, HEINZMANN, guarantees a minimum of 600 charge cycles for the battery. Proper handling and storage, as well as an initial charge, will extend its service life.

3.2.4 Sleep Mode

After approximately 4 weeks of inactivity, or if button (B) is held down for more than 15 seconds, the battery will enter sleep mode. To reactivate the battery, it must be briefly connected to the charger.



3. Electric drive.

3.3 Display and operation

The display includes the following elements:

1	Speed
2	Temperature
3	Total mileage
4	Single journey (TRIP)
5	Support level
6	Speed display
7	Current engine power
8	Battery indicator
9	Light



The control unit is located on the handlebars and features five push-buttons: ON/OFF (A), '-' (B), '+' (C), Light (D) and Settings (E). All settings are adjusted using these push-buttons. There are no other adjustment options.

3.3.1 Switching on

Press the ON/OFF button (A) for at least 3 seconds until the display lights up. Then release the button. This longer press is a safety measure to prevent the system from being switched on accidentally. The system is now ready for use.



Warning

Do not apply any pressure to the pedals when switching on the system, to prevent the drive from starting up unintentionally! Please proceed as follows:

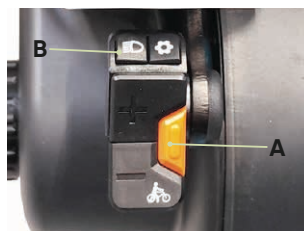
- First, get on the tricycle and put both feet on the ground.
- Then switch on the drive system.
- You can set off now.



3. Electric drive.

3.3.2 Switching off

Press the ON/OFF button (A) for at least 3 seconds until the display goes blank. Then release the button. The drive system is now switched off.



For your information

The system switches itself off automatically if there has been no driving activity for more than approximately 10 minutes. Before using it again, you must switch the drive system back on using the ON/OFF button (A).

3.3.3 Lights On/Off

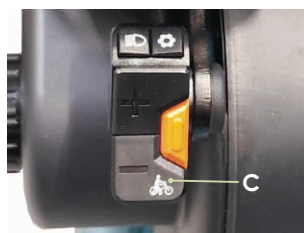
Briefly press the light button (B) to switch the light on. A light icon will appear on the display to confirm this. Press the button again to switch the light off.

3.3.4 Start-up assistance

The start-off assist is an optional feature of the drive system. It allows you to set off with electric assistance without pedalling, up to a maximum speed of 6 km/h. In general, the start-off behaviour depends on the selected assistance level (see **section 3.3.5**).

By button

To activate the start-up assist, press and hold the "-" button (C). The motor assistance will engage after approximately one second. To deactivate the assistance, release the button (C).



By turning the handle

To activate the start-up assist, turn the twist grip (D) towards you. The motor assistance will engage immediately. To stop the assistance, release the twist grip (D).



3. Electric drive.

3.3.5 Setting the assistance levels

The drive system offers five different levels of assistance for driving: **Eco** (Level 1), **Tour** (Level 2), **Sport** (Level 3), **Turbo** (Level 4) and **Boost** (Level 5)

To select a higher support level, press the "+" button **(A)** once briefly.

To select a lower support level, briefly press the "-" button **(B)** once.

The assistance levels **(C)** are shown in the centre of the display, below the speedometer.



For your information

At assistance level '0', the drive system is active but does not provide any assistance.



For your information

When a brake lever **(D)** is squeezed, the electric motor's assistance is stopped. At the same time, regenerative braking is activated, thereby applying additional braking to the tricycle. As soon as both brake levers are released, regenerative braking is deactivated and the electric motor's assistance is reactivated.



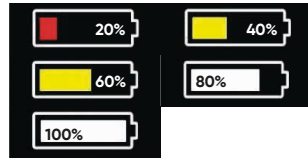
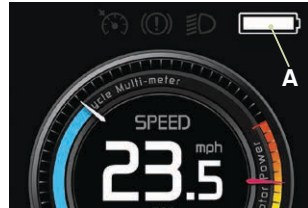
3. Electric drive.

3.3.6 Charge level indicator

The battery charge level is constantly shown in the top right-hand corner of the display (A). Depending on the charge level, the display shows 5 battery bars: 20% – 40% – 60% – 80% – 100%.

When the battery is almost flat, the battery indicator flashes red. The battery then still has a limited reserve capacity. Once this is used up, the drive system switches off automatically. This is done to prevent the battery from being deeply discharged.

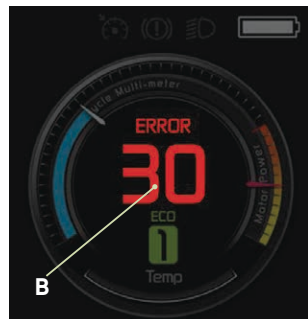
Once the system has shut down automatically in this way, the drive system will no longer provide assistance. Commands will also no longer be accepted when the buttons are pressed. The drive system will only be operational again once the battery has been charged or a fully charged battery has been inserted.



3.3.7 Error code

If an error occurs in the e-bike's electronic control system, the display automatically shows an ERROR code (B).

The meanings of the error codes are described in **section 6.9**. You can only exit the error display once the fault has been rectified. Once an error has occurred, the e-bike will not continue to ride.



3. Electric drive.

3.3.8 Display readings during operation

During operation, the drive system displays various readings. The currently active reading is shown in the lower third of the display. Pressing the On/Off button (C) briefly changes the view.

- **TRIP – Distance travelled**

All kilometres travelled since the last reset are added together. To reset this counter, see **section 3.4.1**.

- **ODO – Total odometer reading**

All kilometres driven are added together.

- **WATT – Average power output**

The average power output since the last reset. This is displayed in energy per unit of time. To reset this reading, see **section 3.4.1**.

- **TIME – Elapsed time**

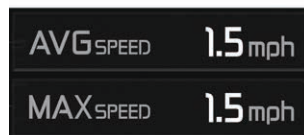
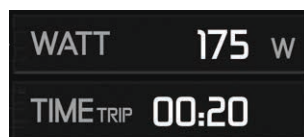
The time elapsed since the last reset is tallied. The display shows hours and minutes. To reset this counter, see **section 3.4.1**.

- **AVG Speed – Average speed for the current leg**

This display shows the average speed travelled since the last reset, in miles or kilometres per hour. To reset this counter, see **section 3.4.1**.

- **Max Speed – Stage maximum speed**

The display shows the maximum speed travelled since the last reset, in miles or kilometres per hour. To reset this counter, see **section 3.4.1**.

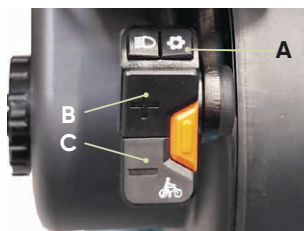


3. Electric drive.

3.4 General settings

When the device is switched on and not in use, briefly press the Settings button (A) to access the settings.

Use the "+" (B) or "-" (C) buttons to switch between the settings/options.



3.4.1 User settings

Reset stage distance (D)

Press the ON/OFF button briefly to open the menu item. Use the "+" or "-" buttons to select between "YES" and "NO". Press and hold the ON/OFF button to exit the menu item.

YES = TRIP is set to zero

NO = no reset

Backlight (E)

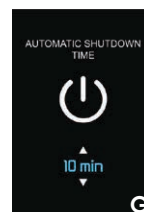
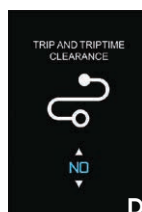
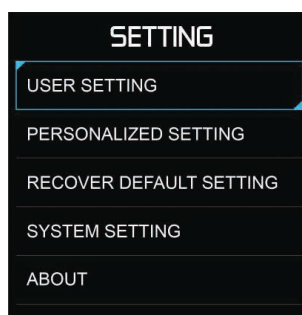
Press the ON/OFF button briefly to open the menu item. Use the "+" or "-" buttons to select a value between "1" and "3". Press and hold the ON/OFF button to exit the menu item.

Unit (F)

Press the ON/OFF button briefly to open the menu item. Use the "+" or "-" buttons to switch between "km/h" and "mph". Press and hold the ON/OFF button to exit the menu item.

Automatic switch-off time (G)

Press the ON/OFF button briefly to open the menu option. Use the "+" or "-" buttons to select a time between "5" and "30" minutes. Press and hold the ON/OFF button to exit the menu option.



3. Electric drive.

Standard display mode

Pressing the ON/OFF button briefly opens the settings menu. In this view, you can adjust the position of TRIP, ODO, TRIP TIME, AVG SPEED, MAX SPEED and WATT on the main display by briefly pressing the "+" or "-" buttons. Press the ON/OFF button briefly to move to the next module. Hold down the ON/OFF button to save the settings and exit the menu.



4. Settings.

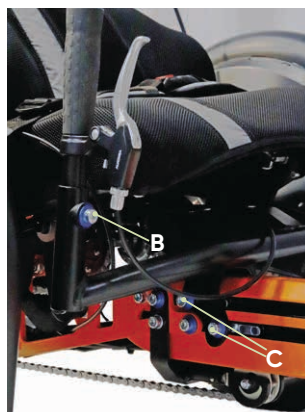
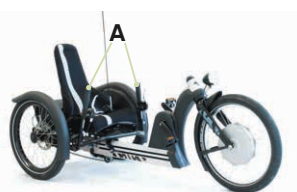
Settings and adjustments to the product or accessories may only be made by people who have been given the necessary instructions by a medical product advisor. Please ensure that none of the user's extremities are in the respective area when making adjustments of any kind to minimise the risk of injury. All adjustments can be made with standard tools (e.g. Allen key, screwdriver or spanner).

4.1 Presets

The **mats.** recumbent tricycle is supplied completely assembled. Before using for the first time, fit the pennant (see **Point 2.8.1**) and make the following presetting.

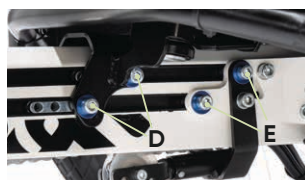
4.1.1 Steering

The **mats.** recumbent tricycle is equipped with lower handlebars (**A**) in the basic model. This can be individually adjusted in distance, height and angle. To adjust the height of the steering handles, loosen the screw (**B**), move the handles to the desired position and then retighten the screw. To adjust the angle and distance to the seat, loosen the screws (**C**) on both sides of the lower handlebar slide and tilt the lower handlebars to the desired position. To adjust the distance between the seat and the lower handlebars, pull the lower link on the frame to the appropriate position. Then tighten the screws again.



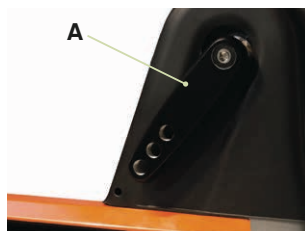
4.1.2 Wheelbase / leg length adjustment

The recumbent tricycle **mats.** can be individually adjusted to the user's height to achieve the optimum distance from the seat to the pedals. Loosen the bolts (**D**) of the rear axle carrier and the bolts (**E**) of the lower handlebar slide on both sides. The step with the screws is not required for the upper handlebars (**D**). The length can now be shortened or extended by pedaling forwards or backwards by hand. Then re-tighten the screws again. The infinitely variable adjustment of the leg length makes it possible to customise the power transmission for the user. Depending on which hip, knee or ankle



4. Settings.

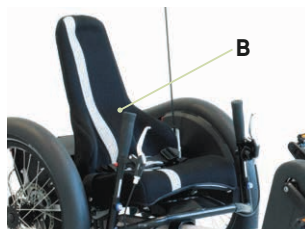
joint angle supports the best possible power transmission for the condition in question, the distance from the seat to the pedals can be adjusted. If an individual adjustment of the leg length is necessary due to e.g. knee contractures of the user or differences in leg length, this can be generated by screwing the pedals into the 3 mounts (125/105/85 mm) of the pedal crank (A).



Please note that contractures in the user's knees must be taken into account.

4.1.3 Seat

The seat (B) included in the basic equipment consists of a bi-elastic mesh fabric with padded areas, which cushions any bumps. Due to the shape and the attachment to the seat construction, my seat adapts to the user's thorax. This achieves customised lateral guidance that does not restrict the mobility required for cycling (arm room for steering, leg room for pedaling), but still provides guidance and limitation. The various adjustment options for the seat and the significance for the user's indications are explained in detail below. Before making any adjustments, first check the user's sitting position by sitting down.



When adjusting the seat, it is important that the seat is unloaded during adjustment.



The seat may only be used again when all screws have been tightened after adjustment and the seat and backrest angle catches are fully engaged!

4. Settings.

When adjusting the seat, please proceed step by step and make changes to the seat tilt, backrest angle and seat height separately.

seat tilt angle

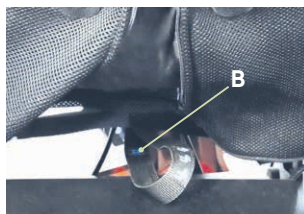
Pull the tension strap **(A)**. If you pull on the side of the loop on which 3 "**mannis**." are visible, you activate the seat tilt. Now tilt the seat to the desired angle and let the seat lock into place by releasing the loop. Changing the seat tilt has an effect on the force applied when pedaling. The higher the front edge of the seat, the more support the thigh has during hip flexion as a traction phase in the pedaling cycle. This enables smooth pedaling even with reduced hip flexion, reduced muscle strength and endurance, reduced cardio-respiratory function, etc. The movement activates the hip and lower leg muscles and makes them elastic, thus supporting physiotherapeutic treatment to prevent and/or stop contractures.



When adjusting the seat, it is important that the seat is unloaded during adjustment.

Backrest angle

Pull the cord/loop **(B)**. If you pull on the side of the loop on which 1 "**manni**." is visible, you activate the backrest angle adjustment. Now adjust the backrest to the desired angle and snap the backrest back into place by releasing the loop. By adjusting the backrest angle, the sitting position can be adapted to a hip flexion contracture. This provides the best possible strength assistance during pedaling with the remaining extent of movement. The muscles are activated and become elastic due to the movement whilst reducing the weight strain, so that physiotherapeutic treatment of the hip flexion contractures are supported.

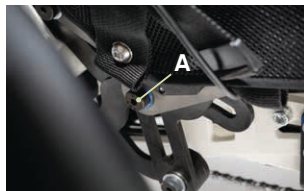


It is important that there is no weight on the seat when adjusting it.

4. Settings.

Seat height

To adjust the seat height, loosen the two screws (A) on both sides, adjust the seat to the desired height and retighten the screws (A). The height of the seat has an affect on the transfer in and out of the recumbent tricycle **mats**. A high seat height is advantageous in the case of balance disorders, limited postural control and contractures within the scope of the indications described (see **point 2.3.1**).



Make sure that the screws are secure and firmly tightened!



Please note that contractures in the user's knees must be taken into account.



For optimum road holding and maximum safety, the lowest possible seat height adjustment is recommended for the user.

The optimum seating position is checked once the user has taken a seat. The leg extension should not total 0°. If the respective pedal is at the shortest distance from the seat, the knee bend should not exceed 90°.



Then retighten the screws of the rear axle carrier and, if necessary, the lower handlebar slide.

4.2 Brakes

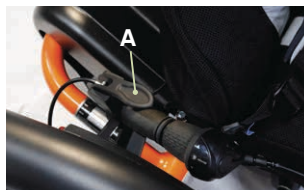
The **mats**. recumbent tricycle is equipped with two mechanical disc brakes on the read wheels (see **Point 3.2.2**). The recumbent tricycle is equipped with adjustable brake levers (B) for braking the rear wheels. To adjust the grip width, screw the screw (C) in or out to bring the brake lever into the desired position. If the drive is configured accordingly (see **Point 2.9**), a backpedal brake can also be available.



4. Settings.

4.2.1 Parking brake

The parking brake supports the user when getting on and off and also secures the recumbent tricycle against unintentional rolling away. Actuating the lever (A) activates or releases the mechanical disc brake on the rear wheel; with a hydraulic disc brake, it is activated on the front wheel. In order to activate the parking brake, push lever (A) up. To release the parking brake, press up the lever (A) back down. The parking brake is always located on the right-hand side and is mounted either on the rear axle carrier or on the seat.



Always ensure that the brake functions correctly and has been adjusted.

Setting the mechanical disc brakes

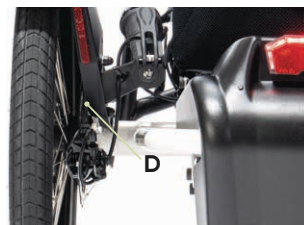
Ensure that the brake function is activated immediately when the parking brake lever or brake handles are actuated. Due to the stretching of the Bowden cables, it is necessary to readjust the brakes after a certain time. To do this, loosen the tension adjustment nut (B) of the brake unit and turn the tension adjustment screw (C) so that the recumbent tricycle cannot roll away unintentionally when the parking brake is activated or the brake handles are actuated.



Leave this work to your specialist dealer in case of any uncertainty (see point 9.4).

4.2.2 Disc brakes on the rear wheels

The disc brakes (D) on the rear wheels are activated by pulling the two brake levers on the handlebars. The left brake lever activates the rear left disc brake and the right brake lever activates the rear right disc brake. To achieve the best possible braking effect, always operate both brake levers simultaneously. If the braking performance of the hydraulic disc brake deteriorates, the brake must be vented and the oil topped up or changed.



Leave this work to your specialist dealer in case of any uncertainty (see point 9.5).

4. Settings.



Warning

- Disc brake pads, brake callipers and brake discs become extremely hot during use. Contact with a hot brake can lead to serious injuries. Care should be taken not to touch the brake calliper, brake disc or brake pads when the disc brake is hot. Be sure to allow the brake to cool down before attempting to service it in any way.
- If you have any concerns about any part of maintenance / operation / repair of the disc brake, please seek advice from a specialist dealer (see **Point 9.5**).
- Disc brakes offer a considerable increase in braking performance. Test your disc brake gradually on a flat surface until you have become accustomed to the braking performance.



Caution

If one of the following phenomena occurs when using the disc brake, stop the drive immediately and ask your specialist dealer (see **Point 9.5**) to carry out checks and repairs if necessary.

- Unusual noises can be heard during braking
- The brake force is unusually strong
- The brake force is unusually weak
- Hydraulic disc brakes have a longer braking distance at the lever and slightly poorer braking performance in very cold environmental conditions

4.3 Tyres and hoses

The tyres on the recumbent tricycle must always have sufficient air pressure, otherwise the tyres may puncture and the rims may be damaged, or the riding characteristics negatively influenced. The minimum and maximum tyre pressure is indicated on the casing (A). If the tyre tread only depresses slightly on being pressed forcefully with the thumbs, the tyre pressure is correct. For exact values, use a pressure gauge!



Check all tyres regularly and replace them immediately if they are damaged or worn!

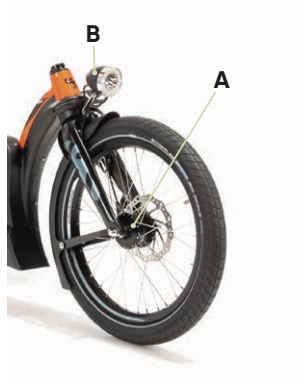


4. Settings.

4.4 Light system / dynamo

The recumbent tricycle is equipped with a light system according to STVZO.

Hub dynamo: The hub dynamo (**A**) is integrated into the wheel and is switched on via the switch (**B**) on the headlight.



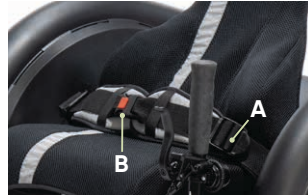
4. Settings.

4.5 2-point strap

The 2-point strap is used to position the user and can be individually adjusted in length. To do this, pull the sliders (**A**) and the corresponding strap ends and shorten or lengthen the lap belt as required.

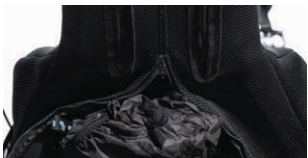
The 2-point strap is equipped with a safety lock (**B**) for closing and opening. The red slider on the safety lock has two positions (locked and unlocked), which must be set manually.

The strap is used to prevent the rider from unintentionally leaving the bike, whether due to involuntary movements, lack of balance or reckless behaviour. In case of problems with postural control, strong deflections of movement, such as extensor spasticity, and deformities, the use of the 4-point harness is recommended.



4.6 Rain cape

The rain cape protects the recumbent tricycle from the weather and is pulled over the seat of the recumbent tricycle. The bag in which the rain cape is stowed under the seat cover is not removed. For this, open the zip (**C**) on the seat cover slightly until the bag is accessible. Then open the zip (**D**) of the rain cape bag, pull out the rain cape and pull it over the seat.



5. Accessories

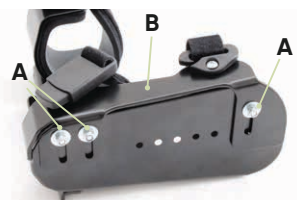
5.1 Foot pans

The foot pan provides lateral guidance and therefore prevents internal or external rotation of the foot. To guarantee this function,

the foot pan is adjustable in width, which can be conducted by loosening the three screws (A) and shifting the side part (B) in the slotted hole. The foot pans are mounted in the centre of the pedals in the factory. To move the pressure point under the foot, it must be moved to three positions. To this end, remove the screws with nuts (C) below the counterplate and move them into the desired position. Then reinsert the counterplate and retighten the screws with nuts (C).

The rotation can be set by undoing the screws with nuts (C) and turning the foot pans on the pedal. In order to secure the user in the foot pan, the foot pans are equipped with straps. These can be closed with the help of magnetic clasps. When you guide the end of the strap (D) towards the fastener, it engages automatically. Press the button (E) to open the straps. For the length adjustment, the hook and loop closure of the strap (F) can be opened on both sides and adjusted in length. To close the strap in the forefoot area, guide it through the opening (G) and close the strap with the hook and loop fastener.

Indications such as **Diseases of the central nervous system** or **neurodegenerative diseases** in their most pronounced or advanced forms are often accompanied by an adduction tendency in the hips and knees and associated internal or external rotation of the feet. By adjusting the rotation of the pedals with lateral guidance, this symptom can be alleviated to facilitate pedaling in the first place. On the other hand, corrective action can be taken if the foot is brought into a more physiological starting position and the dysfunctions of the hip and leg muscles are positively influenced.



5. Accessories

5.2 Foot pans with leg guidance

For the function and adjustment of the foot pans, see **Point 5.1**. The leg guidance also stabilises the ankle and reduces the internal rotation of the leg. The leg guidance can be adjusted by loosening the nuts (**A**) and shifting them in the slotted hole. The height adjustment should be selected so that the calf clamp lies against the vertex of the calf. The depth of the calf clamp can be adjusted by loosening the nuts (**B**) on the inside of the leg guidance. To prevent contact between the leg guide and the floor when the recumbent tricycle is not in use or during transport, the leg guidance can be fixed to the crank with the hook and loop strap (**C**) to prevent the foot pan with leg guidance from tilting on its own. When using the recumbent tricycle, the hook and loop strap can either be wrapped around the leg guidance for storage or stowed in the pocket (at the back of the seat) of the rain cape.

Indications such as **Diseases of the central nervous system** or **neurodegenerative diseases** in their most pronounced or advanced forms are often accompanied by an adduction tendency in the hips and knees and associated internal or external rotation of the feet. By adjusting the rotation of the pedals with lateral guidance, this symptom can be alleviated to facilitate pedaling in the first place. On the other hand, corrective action can be taken if the foot is brought into a more physiological starting position and the dysfunctions of the hip and leg muscles are positively influenced.



5. Accessories.

5.3 Foot pans with dynamic leg guidance

For the function and adjustment of the foot pans with leg guidance, see **Point 5.2.**

For the foot pans with dynamic leg guidance, the adjustment options are installed only on the rear foot part and not on the side like for the foot pans with leg guidance. The dynamic leg guidance also permits defined rotation of the leg and thus prevents excessive abduction, in particular of short legs. At the same time, the stabilisation of the foot joint is retained. To adjust the degree of movement of the leg guidance, loosen the cover (**A**) and the nut below it, and screw the elastomer in or out accordingly. Check the leeway of the leg guidance. To prevent contact between the leg guidance and the floor when the



recumbent tricycle is not in use or during transport, the leg guidance can be fixed to the crank with the hook and loop strap (see **Point 5.2**) so that the foot pan with leg guidance cannot tilt on its own. When using the recumbent tricycle, the hook and loop strap can either be wrapped around the leg guidance for storage or stowed in the pocket (at the back of the seat) of the rain cape. Indications such as **Diseases of the central nervous system** or **neurodegenerative diseases** in their developed or advanced form often involve an abduction tilt in the hips and knees and therefore associated with inner and outer rotation positions of the feet. By adjusting the rotation of the pedals with lateral guidance, this symptom can be alleviated to facilitate m pedaling in the first place. On the other hand, corrective action can be taken if the foot is brought into a more physiological starting position and the dysfunctions of the hip and leg muscles are positively influenced.

5. Accessories.

5.4 Ergotec pedals

The Ergotec pedals can be individually adjusted to the user using neoprene hook and loop straps.

To do this, simply open the strap (A) and bring it into the required position. If the user's shoe is too wide, the strap holder can be reversed and refitted by loosening the two screws (B) so that the pedals are no longer restricted on the outside by the user's shoe. The straps have to be removed and threaded back in.



5.5 Foot positioning pedals

The foot positioning pedals are equipped with toe clips (C) to position the feet and prevent them from slipping out unintentionally. The toe clips (C) prevent the toes from slipping through. A heel rubber (D) is attached to the pedal, which is additionally tightened around the heel after the user has placed the foot in the pedal to prevent the foot from sliding out. For the indications and the mild forms of symptoms the foot positioning pedals are suitable for keeping the feet in contact with the pedals against the influence of gravity thereby optimising power transmission. This relieves the coordination of the feet. More pronounced degrees are better treated with pedals that also influence the tendency to adduct (which can be caused by hip muscle dysfunction or joint misalignment and therefore also help with cardio-respiratory functions and participation.



5.6 Hand positioning aid

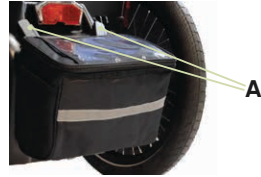
The hand positioning aid provides additional security for the user by keeping their hands safely on the handlebars. To do this, simply place the hand into the hand positioning aid and close the hook and loop closures.



5. Accessories.

5.7 Bag

An optional bag is available for the recumbent tricycle. These are fixed with magnets (**A**) on the drive cover.



5.8 Grip protection

The grip protection is on the outside of the tyres and protects the rider. It prevents limbs from getting caught in the spokes. The grip protection is fixed and cannot be adjusted.



5.9 4-point strap

The 4-point strap ensures correct positioning of the pelvis and also stabilises the upper body. In order to attach the 4-point strap on the seat, the strap guides (**B**) must be fitted first. To do this, open the lower zip (**C**) of the seat cover to gain better access to the holder for the strap guide. Place the strap guidance on the recesses for the slotted holes from the outside, place the corresponding sliding blocks behind them from the inside and screw the two cylinder head screws (**D**) into them. The 4-point strap is fixed with sliders (**E**) on the strap guide. First place the two upper shoulder straps (**F**) over the backrest and guide the straps through the existing strap guide slots in the strap guide (**B**). Then take the two lap belts (**G**) and place them under the screws (**H**) that connect the backrest and the seat using the eyelets provided.



The height and width of the shoulder strap mounts can be adjusted to adapt the 4-point strap to the user's height. To do this, loosen the screws (**D**) and (**I**), move the strap holder into the desired position and then tighten the screws again.



5. Accessories.

The sliders (**A**) can be used to individually adjust all straps in length.

The 4-point strap is equipped with a safety lock (**B**) for closing and opening. The red slider on the safety lock has two positions (locked and unlocked), which must be set manually.

The 4-point strap supports an upright posture in the event of a lack of postural control in the torso through the shoulder straps, which guide the shoulders towards the backrest. The basis for this straightening is the upright pelvis, which is achieved by the two hip straps. The 4-point can also be used in case of involuntary movement deflections.



5.9.1 Moving/removing the strap reducer

For users whose shoulders are below the upper edge of the backrest in a sitting position, a strap reducer (**C**) is pre-assembled, which guides the shoulder strap closer to the backrest and therefore provides better support for the upper body. This can be fitted in 2 positions (under the screws (**D**) or screws (**E**)) and is fitted as standard under the screws (**D**) between the strap mount and seat cover. To change the position, the strap guide must be unscrewed from the seat. To do this, loosen the screws (**D**) and (**E**), remove the belt guide, place the strap in the new position and screw the strap guide back on using the screws (**D**) and (**E**).

If the strap reducer is not required, it can be completely removed. To do this, also loosen the screws (**D**) and (**E**), remove the strap guide, remove the ends of the strap reducer and then reattach the strap guide to the seat. Then thread the shoulder straps out of the strap guide slots (**F**), pull the strap reducer off the shoulder straps (**G**) and then thread them back through the guide strap slots.



5. Accessories.

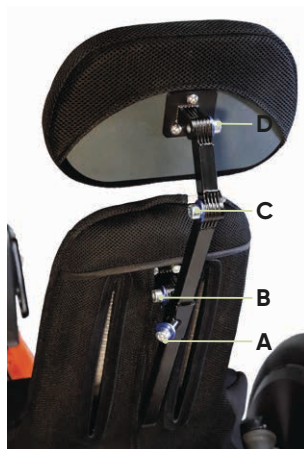
5.10 Headrest

The headrest is used for correct positioning/support of the head and is attached to the upper end of the backrest. It can be adjusted in height, depth and angle. Loosen the cylinder head screw **(A)** with inner hexagon and bring the headrest into the required position. Then retighten the cylinder head screws.

To adjust the depth and angle, loosen the cylinder head screws **B, C** and **D**, bring the headrest into the desired position and then retighten the screws.

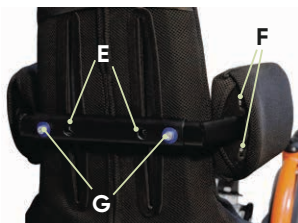
With limited head control, the backrest serves as a support surface for users up to approx. 120 cm tall.

For users who are taller, the contact surface can be enlarged by the headrest so that the head position is made easier and visual control of the surroundings is possible even in the case of poor head control, reduced muscle strength and endurance and involuntary movements.



5.11 Thorax pelotte pads

The thorax pelotte pads are used to correctly position the torso. They can be adjusted in height and width. Now loosen the two screws **(E)** to adjust the height of the thorax pelotte pads. You can adjust the height of both thorax pelotte pads at the same time. To adjust the height of the thorax pelotte pads individually, loosen the screws **(F)** on the back of the thorax pelotte pads. To set the width, undo the screws **(G)** and bring the respective pelotte into the desired depth setting.



5. Accessories.

5.12 Seat insert

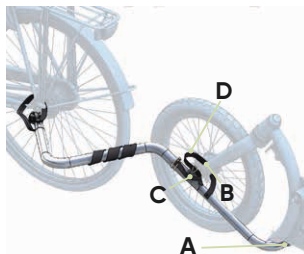
The seat insert is pulled from above over the backrest to the pelvic area where it is aligned. It is used to stabilise the pelvis of slim users.



5.13 Trailer function

The **mats.** recumbent tricycle can be optionally equipped with a trailer function to enable the recumbent tricycle to be towed (except when equipped with a fixed drive.) To do this, hook the rear part of the trailer bar under the **mats.** at the front of the profile (**A**) and swivel it onto the front wheel axle (**B**). Attach the front part and secure it with the hinged splint (**C**).

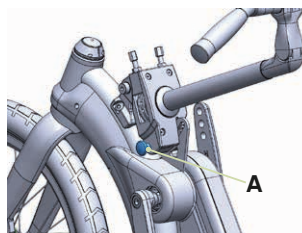
Place the remaining strap (**D**) around the fork and insert the spring pin through the front wheel axle. Then lift the trailer bar at the front and guide it into the bracket on the towing wheel. Guide the safety strap behind the strut of the dropout and insert the splint (**C**), which is secured with the tab on the rubber cap.



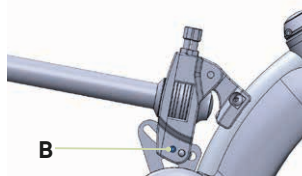
5. Accessories.

5.14 Upper handlebar

Before you get on the **mats**, you must release the steering bar at the front lock (**A**) and fold it forwards and upwards. Once you have taken a seat on the **mats**. The steering bar must be returned to its original position. Please make sure that the lock engages properly.

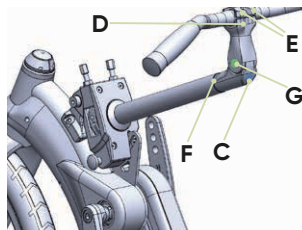


The upper handlebars can be adjusted in angle and height. To adjust the overall angle of the upper handlebars, loosen the Allen screw (**B**), move the upper handlebars to the desired position and retighten the screw.



Height of handlebars

To adjust the height of the handlebars, remove the protective cap from the hexagon socket (**C**), loosen the hexagon socket (**C**) and adjust the stem (**D**) to the required height. By tapping the head of the hexagon socket (**C**) lightly with a hammer, the stem in the fork steerer will loosen. Then re-tighten the hexagon socket.



Ensure that the marking for the minimum insertion depth (F) remains on the stem in the fork steerer and therefore cannot be seen.

Handlebar adjustment

To adjust the handlebar position, loosen the clamping screws (**E**), bring the handlebars into the required position and then firmly re-tighten the clamping screws (**E**). To change the tilt angle on the stem, please loosen the clamping screw (**F**). Then firmly re-tighten the screws again.



After each adjustment, please retighten all screw connections!

After adjustment of the handlebars, there must still be no tension placed on the brake cables. If necessary, extend the cables!

6. Cleaning and maintaining.

6.1 Cleaning and disinfecting

6.1.1 Cleaning

To ensure functional safety and the appearance of the recumbent tricycle, it must be regularly cleaned and cared for. Please observe the following guidelines:

- Never allow dirt to dry onto the bicycle, but always remove it with water and a soft cloth or sponge. Do not use a high-pressure washer for cleaning as otherwise the bearings, the paint or the decorations can get damaged.
- Do not use aggressive cleaning agents. Use a mild detergent solution to clean.
- Repair paintwork damage immediately.

Please also pay attention to our general cleaning and hygiene advice. This can be found at www.schuchmann.de/mediathek.



Danger due to rotating parts

- The motor can start to move unexpectedly when the drive system remains switched on when performing cleaning work on the recumbent tricycle.
Remove the E-drive battery before cleaning.



Never use high-pressure cleaners

The use of a steam jet, high-pressure cleaning equipment or a water jet for cleaning is not permitted. The ingress of water into the switch box, motor or electrical connectors can destroy the equipment.

6.1.2 Disinfection

Various products can be used for surface disinfection of metal and plastic parts. Liquid disinfectants are available as ready-to-use solutions that are sprayed on and evenly applied with a soft cloth. Alternatively, wipes pre-soaked with disinfectant can be used to wipe the products over the entire surface. In both cases, care must be taken to ensure complete wetting. Disinfection in fully automatic disinfection systems is also possible and recommended.

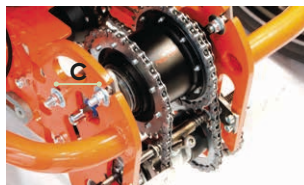
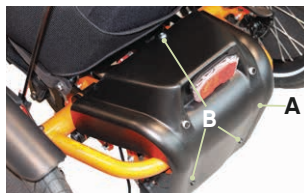
The exposure times may vary and can be found in the manufacturer's instructions for the products used.



6. Cleaning and maintaining.

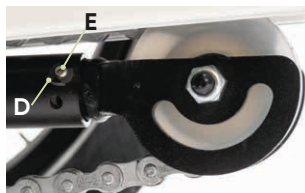
6.1.3 Chain maintenance

Drive chains must be regularly cared for. This is in particular the case after riding in rain. The chain must be lubricated with a commercially available chain oil. Due to the expansion which is a natural result of use, regular inspection of the chain tension of gear unit chains is required. To do this, first remove the cover of the gear unit (A) by loosening the three screws (B) and removing the cover towards the rear. Check the chain tension by testing whether the chain on the gear unit can be pulled max. 10 – 15 mm back. In order to reset the tension of the chains in the drive area, loosen the two nuts (A) on the left and right of the hub. Then pull the hub evenly backwards and retighten all four nuts (C).



Leave this work to your specialist dealer in case of any uncertainty! (see Point 9.5)!

To tension the main chain, pull the locking disc (D) from the locking pin, then pull the pin – the chain tensioner (E) now adjusts the tension itself – reinsert the pin, if necessary push the chain tensioner (E) back slightly – and replace the locking disc (D).



After each adjustment, please retighten all screw connections!



An incorrectly-tensioned chain can lead to increased wear or cause to the chain to come off!

6.2 Servicing / controls

Please carry out a daily visual inspection and check the tricycle regularly for cracks, breaks, missing parts, malfunctions and tight screw connections. In case of a defect or malfunction, please contact the specialist dealer who supplied you with the product (see **Point 9.5**).

6. Cleaning and maintaining.

6.3 Maintenance

For reasons of user safety and to retain product liability, the product must be subjected to maintenance by a specialist dealer at least once a year (see **Point 9.5**). The performed maintenance must be documented in the maintenance plan (see **Point 6.3.2**).

6.3.1 Maintenance specifications

- Check the size adjustment (leg length)
- Check the tyre pressure or check that the tyres are not damaged
- Check the screw connections and retighten to the specified torques (see **point 7.6**)
- Check that the hydraulic line or hydraulic cylinder is intact and that no hydraulic oil is leaking
- Check the lighting according to StVZO
- Check the chain and chain tension, adjust if necessary, clean and oil (see **Point 6.1.3**).
- Check bottom bracket and lubricate if necessary.
- Lubricate the bottom bracket, check play and replace if necessary.
- Check the hub gear and adjust if necessary.
- Check the brake system for function, adjust if necessary. If the brake is poor, check the hand lever, cable, brake lever and brake pads for their condition, adjust and replace if necessary.
- Degrease bearing points.
- Replace any bent or trapped cables.
- Check the rims for side and upper impacts.
- Check the spoke tension and adjust if necessary.
- Check the tyre profile.
- Check the lighting and signal system.
- Check the 8-gear rear wheel hub and lubricate it if necessary.
- Check frame and fork for damage and replace if necessary.
- Have an annual leakage current measurement carried out on the electric drive.
- Check the fixation of all cables and parts.
- Check the tension on the steering cables and tighten if necessary
- Check the function of the entire electrical system.
- Check the operating safety of the battery pack.



Danger of malfunction in case of improper maintenance

Improper maintenance of the electric drive can lead to damage to essential components. This can lead to a fall.

- Maintenance work may only be performed by your specialist dealer (see **Point 9.5**).



6. Cleaning and maintaining.



Danger due to unforeseen motor activity

The motor can set itself in motion unexpectedly, if the drive system remains switched on when working on the recumbent tricycle.

- Remove the battery before carrying out any work on the recumbent tricycle. When you put the recumbent tricycle back into operation after maintenance, assembly or repair, position the recumbent tricycle so that the drive wheel can rotate freely. Only then insert the battery pack and check the functionality of the drive.

6.3.2 Maintenance plan

Maintenance specifications of the manufacturer (see **Point 6.3.1**) were carried out:

Date	Company	Name	signature



Any defects or damage found must be repaired by the specialist dealer or the manufacturer before reuse.

6.4 Repairs

Repairs to the recumbent tricycle may only be performed by your specialist dealer (**see Point 9.5**).

6.5 Controls

Controls to be performed by the user of the bicycle if necessary:

- Check the chain and chain tension, adjust if necessary, clean and oil.
- Check the chain for wear, oil and replace if necessary.
- Check bottom bracket mounting and repair if necessary.
- Check pedals for clearance.

6. Cleaning and maintaining.

- Gear system – check settings.
- Check the handlebar and handlebar stem for damage and replace if necessary.
- Check the brake system for function and adjust if necessary.
- Check the tyre pressure and profile.
- Check the lighting and signal system.

6.6 Storage

Storage in winter

Before storing the recumbent tricycle in winter in a dry room with a constant temperature, clean it (see **Point 6.1**) and ensure that the tyre pressure is sufficient (see **Point 4.3**).

Inspection in spring

Prior to using the tricycle again in spring, ensure that the tyre air pressure is sufficient (see **Point 6.3**) and that there is no damage to the tricycle.

6.7 Spare parts

Only use accessories and spare parts made by Schuchmann, otherwise you will endanger the user and the warranty becomes void. Please contact the supplying specialist dealer (see **Point 9.2**) to order spare parts stating the serial number of the tricycle (see **Point 9.5**). Necessary spare parts and accessories must only be installed by trained personnel.

6.8 Duration of use and re-use

The expected duration of use of our product, dependent on the usage intensity and amount of re-use, totals up to "8" years, if the usage takes place in accordance with the information in these instructions for use. It may be possible to use the product over and above this time period if it is in a safe condition. The expected duration of use does not refer to wear parts, such as for example covers, wheels, batteries.....The maintenance and evaluation of the condition, and if applicable the potential for re-use, must be decided by the specialist dealer. The recumbent tricycle is suitable for reuse. Please observe the instructions for cleaning and disinfection under **Point 6.1** before passing on the product. Accompanying documents such as these instructions for use are part of the product and must be given to the new user.



Should a serious incident occur during the service life of the product despite being used as intended, this must be reported immediately to the manufacturer and the competent authority.



6. Cleaning and maintaining.

6.9 Error messages and troubleshooting

If faults occur during operation of the drive system, "Error" is shown in the display line. At the same time, an error number appears instead of the current speed display. The following table provides information about the possible sources of error associated with these numbers and how the fault can be rectified.

Fehlermeldungen / Error-code auf dem Display	Current Abnormal
21	Overcurrent cut-off
Fix	Remove the battery and check the contacts. If the contacts are in good condition, reinsert the battery and restart the system. Please contact your specialist dealer (see section 9.4) if the battery contacts are damaged or if the error continues to occur.

Fehlermeldungen / Error-code auf dem Display	Throttle Abnormal
22	Rotary handle not in the home position at system start
Fix	Make sure that the rotary handle is in the home position when the system starts. If the error still continues to occur, the rotary handle is probably defective. In this case, please contact your specialist dealer (see section 9.4).

Fehlermeldungen / Error-code auf dem Display	Motor Phase Problem
23	Problem with one motor phase
Fix	Check all connectors and cables leading to the motor. Restart the system. Please contact your specialist dealer if the error continues to occur.

Fehlermeldungen / Error-code auf dem Display	Motor Hall defect
24	Hall sensor in the motor defective
Fix	Check all connectors and cables leading to the motor. Restart the system. Please contact your specialist dealer if the error continues to occur.



6. Cleaning and maintaining.

Fehlermeldungen / Error-code auf dem Display	Brake Abnormal
25	Brake motor cut-off fault
Fix	Restart the system and check whether the brake lever is in the home position. Check the brake signal cable. If the error still continues to occur, there is a defect in the system. In this case, please contact your specialist dealer.

Fehlermeldungen / Error-code auf dem Display	Communication Abnormal between display and controller
30	Communication between display and controller disrupted
Fix	Check the connector on the display cable. Inspect the display for visible damage. Restart the system. Please contact your specialist dealer (see section 9.4) if damage to the connector or display is visible, or if the error continues to occur.

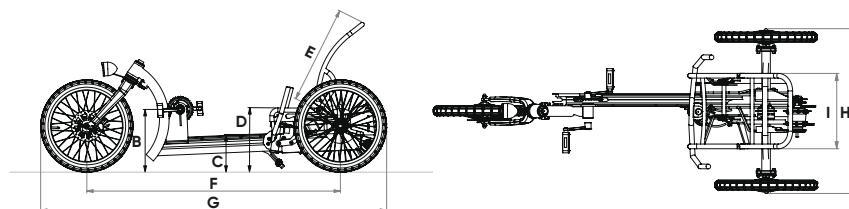
Fehlermeldungen / Error-code auf dem Display	Power button sticking fault
31	ON/OFF switch is jammed
Fix	Check whether the button has become stuck. If the error still continues to occur, there is a defect in the system. In this case, please contact your specialist dealer.

Fehlermeldungen / Error-code auf dem Display	6KM walk assist button sticking fault
34	Starting aid button is jammed
Fix	Check whether the button has become stuck. If the error still continues to occur, there is a defect in the system. In this case, please contact your specialist dealer.



7. Technical data.

7.1 Dimensions



		mats.
	Body height	1100 – 1750 mm
A	Seat bone length	ca. 650 – ca. 1100 mm
	Inside leg length	460 – 830 mm
B	Bottom bracket height	325 mm
C	Step-in height	200 mm
D	Seat height	320 – 420 mm
	Seat angle	0 – 20°
	Seat depth	260 mm
E	Length of the backrest	500 mm
F	Wheelbase	1150 – 1420 mm
	Track width	690 mm
G	Total length	1650 – 1920 mm
H	Total width	760 mm
	Total height	650 – 880 mm
I	Max. Seat width for narrow seat	370 mm
I	Max. Seat width for wide seat	460 mm
	Turning circle	2430 – 3950 mm
	Empty weight	29 kg
	Max. Load	75 kg



7.2 Wheels

Front wheel / rear wheels	20" x 2.15" Schwalbe Big Apple
Rims	20" Ryde Big Bull
Spokes	2 mm, stainless steel

7.3 Tyre pressure

The minimum and maximum tyre pressure is indicated on the casing (**A**).



7. Technical data.

7.4 Drive system

System	
Protection class	3

Control	
Operating voltage	36 V
Max. current	depending on design & operation: 10 – 33 A

Motor	
Type	PRA 180-25
Motor nominal voltage	22.8 VAC
Achievement	250 W Pedelec (DIN EN 60034-1)
Speed during travel on the flat	depending on design & wheel diameter approx. 60-330 1/min
Torque	11.4 Nm
Impulse torque	up to 60 Nm
Overtemperature protection	Type KTY84-130
Overall motor diameter	Ø 220 mm
Weight	4.5 kg
Protection class	IP54
Utilised	0.5 – 1 kWh/100km

Battery pack		
Type	Lithium ion battery	
Nominal voltage	36 V	
Capacity	20 Ah, 720 Wh	
Charging time	approx. 8.5 h (at charge current 2 A)	
Temperature ranges	Operation	(-)20 – 60°C
	Charging	0 – 45°C
	Storage	(-)10 – 35°C



7. Technical data.

7.5 Lighting system

Front lighting	
Type	Union UN-4925
Luminous intensity	20 lx
Including reflector	Yes
On/off switch	Yes
Automatic light/dark sensor	No
Parking light	No
Daytime running light	No
Suitable for E-bike	Yes, 6-42 V
Primary colour	black
Product weight	120 g
Technology	LED

Rear lighting	
Type	UNION UN-4365
Parking light	Yes
Registration light	StVZO
Assembly	Rear cover
Technology	LED
Integrated reflector	Yes

7.6 Torque specifications

Screw connection	Tightening torque in Nm
Pedal crank	40 Nm
Wheel nuts (with electric drive)	45 Nm
Wheel nuts (without e-drive)	40 Nm
Frame length	26 Nm +/-1
Lower link distance and angle	26 Nm +/-1
Lower link height	8-10Nm
Top link angle	17Nm +/-1
Upper link stem Depth adjustment	12-23Nm

7. Technical data.

Top link stem angle adjustment	17–18,5Nm
Top link stem Handlebar clamp	6–8Nm
Pad height adjustment on the seat	20 Nm +/-1
Pad width adjustment	20 Nm +/-1
Pad height adjustment on the pad	2,5Nm +/-0,5
Headrest attachment	6Nm +/-1
Headrest positioning	20 Nm +/-1
Pedals	35–40Nm
Seat height adjustmen	26 Nm +/-1
Footrest width adjustment	4–5Nm
Footrest pressure point position (attachment to pedals)	4–5Nm
Footrest leg guide Depth adjustment	4–5Nm
Footrest leg guide Height adjustment	2,5Nm +/-0,5
Dynamic footrest leg guide Height adjustment	4–5Nm
Connection 4-point belt top	20 Nm +/-1
Lap belt connections	26 Nm +/-1

7.7 Equipment

Hubs	Front: Shimano DH3D30 hub dynamo, Rear: 36 hole with brake disc mount
Brake system	Rear: 2x AVID disc brake (mechanical)
Gear change	Basic mode without gear change (Shimano Nexus 8 optional)
Crank set	Crank length 125/105/85 mm, chain ring 18T
Pedals	Simple pedals in basic model
Dynamo	Shimano DH3D30 hub dynamo
Headlight	Union classic 20 UN-4925
Rear light	Union 4365
Mudguards	Schuchmann design
Frame colours (standard)	Pure orange RAL 2004, turquoise RAL 5018, pure white RAL 9010



7. Technical data.

7.8 Seat

Padding	Evazote (5 mm, elastic), RG50 (50 kg/m³)
Cover (centre section)	Mesh (bi-elastic)
Cover (side parts)	Durable textile

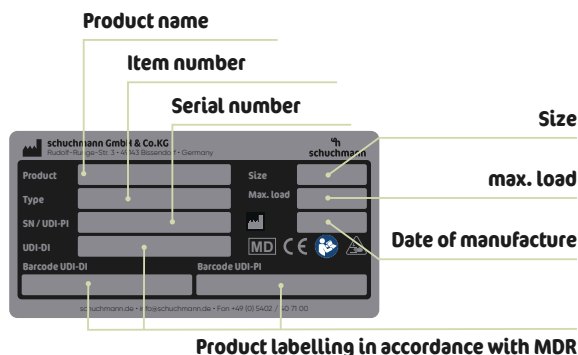
8. Guarantee.

The two-year statutory guarantee period shall apply for all products. This begins with the delivery or handover of the goods. Should a verifiable material or manufacturing fault occur within this time period, we shall, after carriage paid return to us, view the indicated damage and, if applicable, either repair or deliver a new product at our discretion.

9. Identification.

9.1 Serial number / date of manufacture

The serial number, the date of manufacture and other information can be found on the type plate, which is located on all of our products (**A**).



Product labelling in accordance with MDR

9.2 Product version

The **mats.** recumbent tricycle is available in one size and can be supplemented through a diverse range of accessories (see **Point 5**).

9.3 Issue of the document

Instructions for use for **mats.** – Change status D; Issue 2026-06-09

9.4 Name and address of the manufacturer, specialist dealer supplying the product

This product was manufactured by:



Schuchmann GmbH & Co. KG

Rudolf-Runge-Str. 3 · 49143 Bissendorf · Germany
 Phone +49 (0) 5402 / 40 71 00 · Fax +49 (0) 5402 / 40 71 109
 info@schuchmann.de · www.schuchmann.de

This product has been delivered by the following specialist dealer:







schuchmann.de