

SCHACHNER

ELEKTROFAHRZEUGE



User Manual

Central Motor MM15

Preface

Dear client!

We want to congratulate on your acquisition of a Schachner central motor – electric kit. We are glad to inform you about operation, maintenance and care of our e-kits on the following pages.

You bought a product from Austria which have been technically improved during more than 24 years and is approved in Europe for 10.000 times.

The electric kit has been developed for people who like to be in motion but feel that riding a bike up a hill or with headwind is too hard for them. It is particularly strong, robust and totally maintenance free - for people who attach importance to quality, health, security, reliability and long life.

The Schachner e-kit has been developed in Austria especially for mountain cyclists and it proved very well.

We hope you enjoy using your new e-kit and wish you always a good, secure and accident- free ride!

best regards



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hint!

To avoid faults please read the operating instructions very carefully before putting the e-kit into operation.

This kit offers numerous functions which can only be used optimally by using the kit in the right way. This is also important to reach optimal life cycle and distance.

When a malfunction occurs, please take the operating instructions, check the cable connections and try to patch the fault.

In case a malfunction cannot be repaired from your side, please contact your specialized dealer. Reparations should always be done from a qualified, specialized dealer!

2 Warranty

According to the European warranty- law from January 1st 2002, we grant a legally warranty of 2 years. The warranty period begins from handing over of the kit. Please keep the invoice for time of warranty to proof the purchase, respectively the hand over date. When spare parts are mounted in the time of warranty, the warranty time will not be prolonged.

attention!

The warranty for the battery is half a year, because it is a consumable article. We offer you a half year more for our high-quality batteries.

We can only guarantee handling by warranty if you submit the battery including invoice. For batteries which cannot be sold for longer time you have to secure regular charging. If not, the warranty time will not be prolonged.

The warranty does not refer to:

- damages occurred by improper use and irresistible force,
- all parts of a bicycle, which are subject to a wear and tear conditional on the function, as far as there are no production or material faults,
- damages, occurred by improper or defectively care and reparations, modifications or exchanges which have not been done professionally,
- belated added parts which do not belong to the scope of supply at time of hand over or damages that occur of not-professional assembly of those added parts
- damages occurred by oxidation, corrosion and environmental impacts.

Entitled warranty demands are present, if:

- a production- or material fault exists,
- the complained damage or fault already existed at the time of hand over to the customer
- the damage or the fault causally occurred because of an intended deallocation from Schachner GmbH

The warranty includes all necessary spare parts.
Further demands are excepted.

3 Scope of supply

When you acquire an e-kit from Schachner GmbH, it consists of the following parts:

- control unit on the handle bar
- LCD-display
- motor with int. controller, connection cable and torque sensor
- carrier / holder for frame battery
- charger
- speed sensor with magnet
- crank set
- user manual
- assembling tools

- Battery: 9Ah / 11Ah / 15Ah

If you have acquired the e-kit completely assembled you only receive a charger and this operating instruction added to the bike.

All other parts are already assembled.

Assembling schedule

Display and Control unit

Battery Carrier



Central motor
integrated controller
Torque sensor

4 Driving operation

A bicycle, with Schachner e-kit is according to the European draft standard prEN 15197 an "EPAC" (Electrically Power Assisted Cycle) also called "pedelec" (pedal electric cycle).

The Schachner Pedelec is a bicycle including drive support. It is equipped with an electromotive auxiliary drive with a maximum continuous rating of 250 Watt. The driving speed with motor power is limited to 25 km/h and the maximum power output is bounded to 400 Watt.

The motor performance depends on the footwork of the cyclist. Because of that, pedelecs are rid of approval-, insurance-, and driving licence-obligations and are not subject of age restriction. Additionally we offer a starting aid which brings you in motion safely.

When you pedal stronger at the start, in the case of headwind and when driving up a hill, the distance you can reach with a charged battery can be increased a lot. With the help of the shifting system you can regulate the pedalling speed in relation to the driving speed. When you drive up a hill and the driving speed gets lower, you can switch to another gear to keep the regular pedalling frequency.

The complete power unit is very light and when the motor is turned off, it is totally separated from the bike. Also without switching on the e-kit you have a very manageable and smoothly running bike.

hint!

First of all, please ride the bike without help of the motor to familiarize with ride comfort, function of shifting system and brakes.

5 Function description: Motor

You have acquired a totally maintenance-free high performance central motor.



The nominal speed is 90 revolutions per minute, the nominal performance is 250 Watt and the maximal performance is app. 400 Watt.

The motor is mounted in the bottom bracket instead of the bottom bracket.

To avoid damages it is recommendable to let reparations be done by professional workshops which also check and secure the correct function of the brakes.

6 Function description: Carrier

The battery is located in the carrier or directly fixed in the frame (depending on the model) and it has a cable which leads to the controller. The lock protects the battery from dropping out of the carrier and from thefts.

7 Function description: charger

For charging you can take out the battery or charge it directly on the bike.

The temperature of the battery should not drop below 5°C or exceed 35°C while charging; otherwise the battery cannot be charged.



hint! As soon as the battery is out of the recommended temperature, the red lamp of the charger shines. Out of this reason, please let the battery cool down after driving and charge it only cooled down.

To charge the battery, please act as follows:

- Put the charger and the battery on a non- flammable base for duration of charging.
- First connect the charger with the battery, and after that, please connect the charger with a 230 voltage receptacle.
- The charging procedure begins promptly. – The red lamp is shining.

The charging procedure takes about 5 hours for an empty battery (depending on the capacity).

The charging rate amounts approximately 2 Ampere and the charging voltage 36 V.

As soon as the battery is completely loaded the charging will be stopped automatically. – The green lamp on the charger is light.

hint!

The best time for recharging the battery is at night. So the battery will be fully loaded next morning. Overloading is impossible!

If you are using a new battery (or again after longer storage) the distance you can reach with one full load will increase during the first charging processes.

In the winter we recommend to store the full charged battery in a dry area. As the battery discharges also when it is not in use, you should load for some hours every 6 weeks, so that the battery will not be damaged because of over-discharging. Before setting out the first run please load up the battery again.

8 Function description: Battery

9 Ah / 11 Ah / 15 Ah NCM Battery

- battery integrated in the luggage carrier
- riding distances: 9Ah: 50-60km; 11Ah: 60-80km;
15Ah: 80-100km
- weight: 9Ah: 2,8kg 11Ah: 3,0kg 15Ah: 3,1kg

Tipp!

- very favourable power-weight-ratio
- strong power – high reach



The state of charge of the battery you can control on the integrated display on the battery, when you push the red button. The battery is empty if only the red lamp is light.

The length of the way you can drive with a full battery charge depends decisive on structure of the way, ambient temperature, head wind, tyre pressure, weight of the driver, age of the battery as well as how often you use the motor and how strong you pedal.

So you can reach a high range:

- recharge the battery fully after every run.
- drive mainly with a low supporting step.
- avoid to use the electronic drive all the time.
- Check tyre pressure every month (3.5 to 4 bar).
- Oil the chain every 200 to 300 km.

hint!

For long driving distances you can take the charger in a bag with you. Eventually stop-offs increase the range of the battery notable. The battery can, for example when you make a tour for several days, be fully recharged during the night.

The connector on the battery is for connecting the charger. It should always be closed with the cover (only open to charge) to protect the contacts from dirt and moisture.

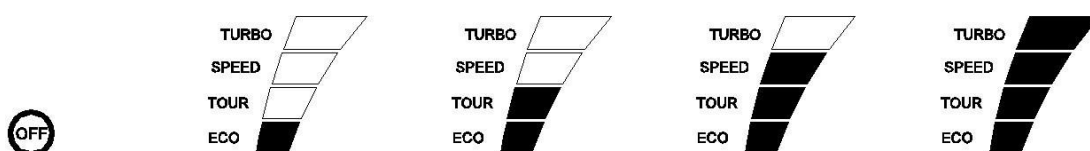
9 Handling and function of the LCD-display

Display dimensions: 102.5mm * 74.5mm * 28mm



⏻ Press this button to power on the LCD display, Long pressing the button for 2 seconds to power off. Automatically shut off without any operation in 5 minutes.



There are 5 modes ("OFF", "ECO", "TOUR", "SPEED", "TURBO") switching. Press **+** this **-** button to adjust the power assist. Default is ECO mode.



i Press this button, the modes loop switch as below: "ODO", "TRIP", "AVG", "TIME". The default option is: "ODO"

Normal function


BACKGROUND LIGHT

Press this button  under the system is switched on, the background light  turns on. Press again to switch off again. Output voltage is 6V.

TRIP DISTANCE (TRIP)

TRIP


888.8 km

Show the one way trip distance, max data is 999km. Under trip distance, press the  button for 2 seconds to zero cleaning.

ODOGRAPH (ODO)

ODO

8888 km

Show total mileage, the max. data is 9999km. Under trip distance, press the  button for 2 seconds to zero cleaning.

MOVEMENT TIME (TIME)

TIME

888.8 h

Show movement time. Long press the  button for 2 seconds to zero cleaning.

AVERAGE SPEED (AVG)

AVG

888.8 km/h

Show average speed (average speed=trip distance / movement time), speed resolution is 1km/h (mil/h), full range is 99 km/h or 99mil/h.

DIAGNOSTIC CODE

E01

ODO

8888 km/h 

Show diagnostic code. Once the system has error, the diagnostic code will be shown on the screen. The format is "E0x".


E02: Motor hall sensor failure or Motor cable short circuit

E03: Controller failure

E04: Throttle failure

E08: Under voltage alarm

Hiding function

To enter the hiding function, you should press **i** and  for 3 seconds on start-up interface. Then all the items show up.

Then press **i** to choose the functions: "ODO", "TRIP", "AVG", "TIME", "d1", "cc", " km/h", "6 km/h".

WHEEL DIAMETER(D1)

d1

0026

Press **i** to do the wheel diameter selection.
Use **+** and **-** to adjust the wheel size from 8-28". Default value is 26".

SPEED SENSOR SELECTION

CC

0001

Press **i** to choose the speed sensor.
Use **-** and **+** buttons to switch the data from 1 to 12, the number represents this number signals output per circle.

SPEED UNIT SELECTION (KM/H MIL/H)

888.8 km/h
mile/h

Press **i** to select the speed unit.
Use **+** to switch between km/h and mil/h. Default is km/h.

WALK ASSIST FUNCTION (6KM/H FUNCTION)

Press **i** to enter into 6km/h function. Then press **+** to switch on/off the starting aid. Default is off.

10 Bicycle operation

Put your battery into the carrier, lock it and detract your key. Press the ⏻ button on the display to switch the display on. The bicycle is ready for driving.

To use the starting aid, press “-” to switch it on. The starting aid will support your as long as you hold the button.

When you start to ride, please choose your accurate supporting level of the motor. After that, you can ride your E-bike just like a normal bike and pedal as you like and the motor will support you during riding. Depending on your chosen motor support level the motor will support you more or less.

As the torque sensor is integrated in the motor system, the force you put on the pedal is measured and according to the chosen support level you will get more or less motor support.

Example: If you drive upwards a hill or mountain, you have to pedal stronger. The torque sensor will recognize that and will output more power to support you and to disburden you.

11 Disposal



The battery needs to be disposed according to the Guideline 2006/66/EG from European parliament and council with separate waste and may not be disposed with the normal garbage.

As consumer you are legally liable to dispose the old battery-pack according to the regulations. You can give the old battery to every public collection point free. The battery has to be discharged or secured against short circuit.

It is also possible to send in the old battery, for example to get a new one, directly to us, the manufacturer.

12 Safety Guidelines

- Do never open the controller, battery, motor or other parts, to undertake reparations or engagements yourself. It would not only be too big risk of injury, also the warranty time will not be prolonged. Although all electric parts are shield from spray water they should not be exposed for longer time to rain or constant wetness. To avoid development of condensation water it would be advisable to park the bike on a dry and aerated place. We want to discourage of cleaning controller, motor or battery with a high-pressure cleaner, because water can invade. By a short circuit in the electric circuit battery or other parts can be destroyed. This can require expensive reparations which can NOT be made as warranty!
- Although the batteries voltage from only 36 Volt is not dangerous for people currants of some hundreds Amperes can flow during a short circuit.

To have an idea from the energy content of your small and harmless looking battery, please consider that it would be possible to start a big, heavy diesel engine of a truck without any problems with this battery!

- Protect the electric drive unit from moisture. Avoid dropping, spraying and rain water.
- Clean all parts of the electric drive unit only with a soft cloth and not with stridently polish and cleaning agents.
- Please put charger and battery always on a not flammable base for the time of charging.
- Do never cover battery and charger!
- Only use the supplied charger!

The height of the charging current and automatically cut off after charging is very important for the lifetime of the battery.

13 Error search

Problem	Possible reason	Remedy
Electric kit cannot be switched on. No lamp is shining.	<ul style="list-style-type: none"> • Battery is empty • Main cable broken • Controller broken • Display broken • Display cable broken 	<ul style="list-style-type: none"> • Charge battery • Check the main cable • Test new controller • Test new display • Test new display cable
The controller can be turned on but turns off automatically itself after a short time when use the throttle grip.	<ul style="list-style-type: none"> • Battery is empty • Battery is broken • Carrier is broken • Connector broken • Controller got too warm • Controller is broken 	<ul style="list-style-type: none"> • Charge battery • Test new battery • Test new carrier • Test new connectors • Cool down the controller and try again • Test new controller
You can hear a „crack“ from front wheel under pollution.	<ul style="list-style-type: none"> • Not enough grease on the freewheel or toothed wheels in motor • Spokes are loose 	<ul style="list-style-type: none"> • Let the freewheel and toothed wheels grease with molykot-grease • Fix the spokes
The range of the battery is too short.	<ul style="list-style-type: none"> • Charger broken • Battery broken • Check the bike for free movement • Have a look at the temperature 	<ul style="list-style-type: none"> • Test new charger • Test new battery • Test brakes, wheels and chain • Charge battery in temperatured room
The motor turns until it reach 25 km/h also without pedalling	<ul style="list-style-type: none"> • Kit has been set as E-Bike 	<ul style="list-style-type: none"> • Change to Pedelec-System only possible at your dealer's site!

Charger is connected with the battery and a receptacle with 230 Volt. No lamp is shining.	<ul style="list-style-type: none"> • Charger broken • No electricity in the receptacle 	<ul style="list-style-type: none"> • Test new Charger • Check the receptacle
Charger is connected with the battery and a receptacle with 230 Volt. The red lamp is shining.	<ul style="list-style-type: none"> • Contacts are oxidizing • Charger broken • Battery broken 	<ul style="list-style-type: none"> • Clean the contacts with contact spray • Test new Charger • Test new Battery

14 Technical Data

Motor	Central motor Nominal power: 250 Watt Maximal power: 400 Watt 90 Revolution per minute
Battery	Li-Ion-battery pack with 9Ah/36V (324Wh) Li-Ion-battery pack with 11Ah/36V (396Wh) Li-Ion-battery pack with 15Ah/36V (540Wh) Riding distance: 9Ah: 50-60km 11Ah: 60-80km 15Ah: 80-100km
Charger	Input voltage: 230 Volt, 50 Hz Charging voltage: 36 Volt Charging amperage: 2 Ampere Charging time: 5-6 hours

**We hope you enjoy using your e-kit and wish
you always a good ride with your Schachner
electric drive unit!**



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