

SCHACHNER

ELEKTROFAHRZEUGE



User Manual

Central motor MM13

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 22 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 can not be repaired from your side, please contact your specialized dealer. Repairs should always be done from a qualified, specialized dealer!

2 Warranty

According to the European warranty- law from 01. January 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 can not 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:

- LCD-Display with button-device
- Throttle grip with connection cable
- Controller
- Motor with connection cable
- Carrier
- Charger
- Cadence sensor cable including bracket and magnetic disc
- Speed sensor with magnet
- User manual

- Battery: 9Ah Battery / 11Ah Battery

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



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 can not only be regulated with the throttle grip, it is dependent 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.

attention! For handicapped people and vehicles which are not specify for road traffic it is allowed to drive up to a speed of 25 km/h only with throttle grip (without pedalling). If you want to drive only with motor power up to a speed of 25 km/h and do not want to pedal (where the road traffic regulations are valid) you need to register your bicycle.

Additionally we offer a starting help which brings you in motion safely. You can and should move your bike with your own power from time to time.

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 pedaling speed in relation to the driving speed. You need least of power when you pedal 40 to 60 times a minute. (Athletes pedal around 100 times a minute.) When you drive up a hill and the driving speed gets lower, you can switch to another gear to keep the regular pedaling frequency.

hint!

You can regulate the assistance of the e-kit also without throttle grip but with pedalling frequency. To do this, please pull out the connector of the throttle grip from the controller and switch on the controller again.

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: Cadence sensor

The cadence sensor with the magnetic disc is responsible for the detection of the cadence.

It is plugged in, on the backside of the controller and it is responsible for the limitation of speed according to the European norm project prEN 15194.

attention! For handicapped people and vehicles which are not specify for road traffic it is allowed to disconnect respectively not mount the sensor. As soon as sensor is disconnected you need to switch on the controller new because the terminal assignment checking happens.

6 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 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.

7 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.

8 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 can not 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.

9 Function description: Battery

9 Ah / 11 Ah NCM Battery

- battery integrated in the luggage carrier
- riding distances: 9Ah: 50-70km 11Ah: 60-80km
- weight: 9Ah: 2,6kg 11Ah: 3,0kg

Tipp!

- very favorable 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.

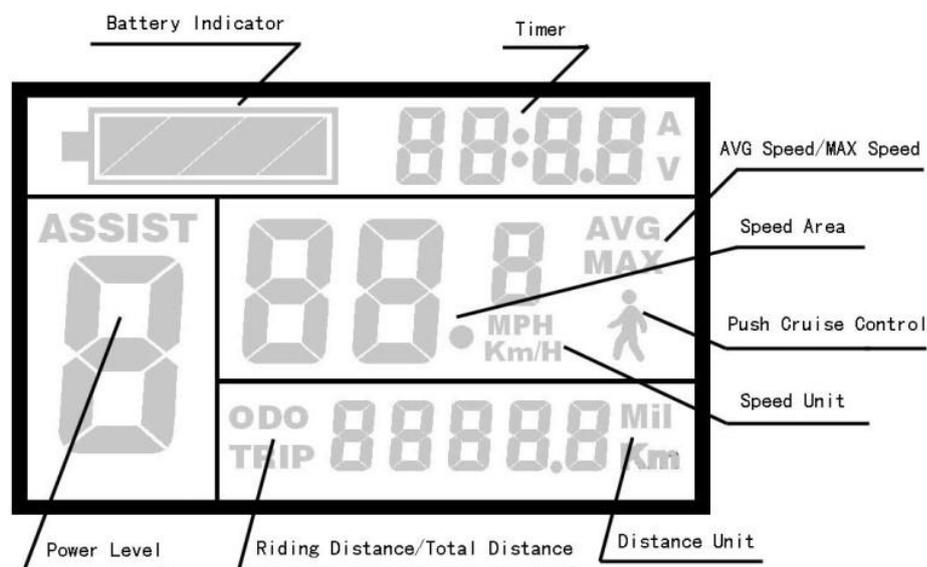
The connector on the battery is for connecting the charger. It should always be closed with the cover (only open to charge) to protect the contacts from dirt and moisture.

10 Handling and function of the LCD-display

Outlook and function

LCD display settings include local time setting, top riding speed setting, metric system / english system setting (MPH and Km/H, Mile and Km), wheel size setting (18—28inch), LCD backlight brightness setting.

LCD-display displays battery capacity, time, motor power ratio, riding speed, riding distance, 6Km/h power assist walk, and malfunction code of the electronic control system.



The LCD-display is equipped with a separate control unit which is connected to the display with a cable. In this way the control unit could be mounted either on the left or right side of the handle bar.

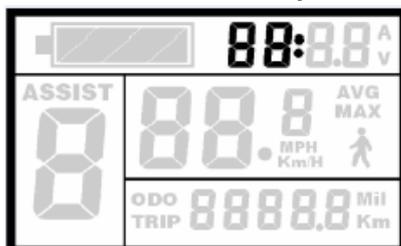
In this description the  -button is named as „Mode“,  is „UP“ and  is „DOWN“.

Settings

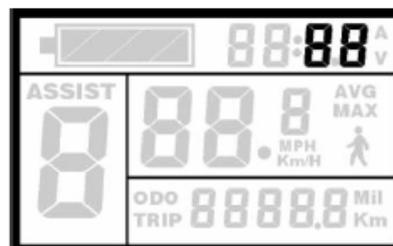
Press the MODE button and start the display. After start-up, please hold both UP and DOWN at the same time, for 3 seconds, LCD will enter into the setting state.

Time Setting

After entering into the setting state, first set the HOUR by using UP and DOWN. Press MODE for confirmation and then set the MINUTE by using UP and DOWN. Press MODE for confirmation and then set the top riding speed.



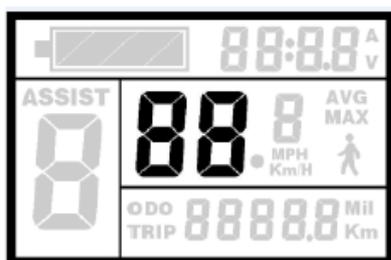
Setting hour



Setting minutes

Top-speed setting

The default figure of the top riding speed is 25 km/h. Please do not change this point, it is programmed by your dealer!



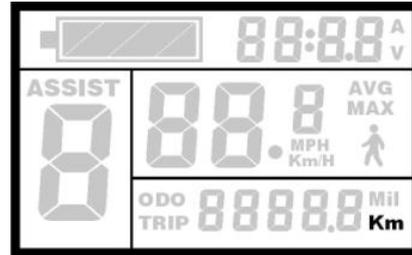
Top-speed setting

Choice of Display Unit

Press UP or DOWN to choose a display unit (metric / english system). The unit could be MPH and Km/h. The range unit is changing accordingly with the speed unit. Press MODE to save.



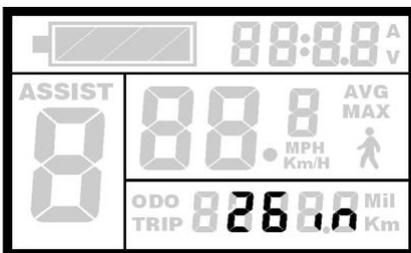
English system



Metric system

Wheel size setting

Press UP or DOWN to choose a corresponding wheel diameter to ensure the accurate display of speed and distance. Press MODE to save.



wheel size

Helligkeit der Hintergrundbeleuchtung

Press UP or DOWN to modify the backlight brightness. You can choose from level 1 to level 3. Level 1 is the minimum brightness. Level 3 is the maximum brightness. The default value is level 1.

Exit setting

In the state of parameter setting, short press MODE to make confirmation. Hold MODE (more than 2 seconds) , save the current setting and exit the setting interface.

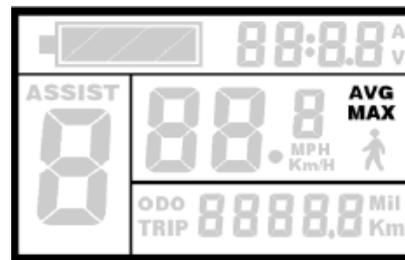
Normal Operation

On / Off

Press MODE and the display start to work for the controller power supply. In the Power On State, hold MODE or lay aside (the state is no speed and no setting) for five minutes, to cut off the e-bike power supply. In the Power Off state, the display and the controller don't use the battery power supply.

Speed display

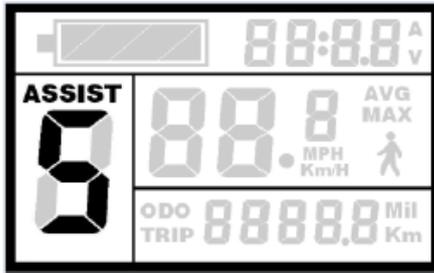
When the e-bike starts, the display will automatically show the current speed.



Hold UP and the display will show the MAX speed during this ride. Hold UP again and the display will show the AVG speed during this ride. Hold UP again and the display will turn to the current speed display.

Power levels

Press UP or DOWN to change motor output power of the motor. The power ranges from level 1 to level 5. Level 1 is the minimum power. Level 5 is the maximum power. The default value is level 1.



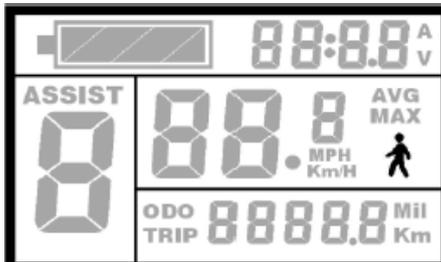
ASSIST ASSIST ASSIST ASSIST ASSIST



The support levels

Starting aid

To use starting aid, hold  button and turn the throttle grip. The more you turn the throttle grip, the faster the bike will run. The starting aid will support you for 10 seconds, then the motor support is stopped.



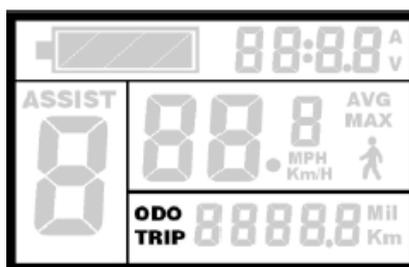
starting aid

Activation of the display backlight

Hold both UP and MODE for 3 seconds and turn on the display backlight. When the surrounding light is not enough or it is in the evening, you can turn on the backlight. At the same time, the bicycle light is turned on, when it is connected to the light module of the controller. Hold both UP and MODE for 3 seconds again and you can turn off the backlight and bicycle light.

Riding distance

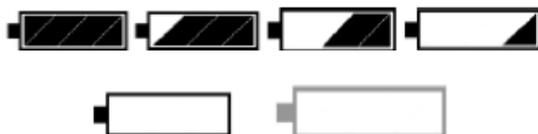
Press MODE and change between riding distance and total distance. Meanwhile the riding time and total time will change with it.



riding distance

Battery capacity

When the battery capacity is high, the five battery segments are all right. When the battery is low voltage, the battery display frame will flash. This indicates that the battery is severely low voltage and needs to be recharged immediately.



battery indicator

Error code

If there is something wrong with the electronic control system, the display will show the error code automatically. The following are some definition of malfunction codes.

Value	Description
21	Problem with the electricity
22	Problem with the throttle grip
23	Motorcable not connected
24	Problem with motor-sensor
25	Problem with the brakes
30	Communication problem



Display error code

Change of display battery

Ride your bike in a safe way. Don't hit or knock the display. When you replace the display battery, please detach the display from the handlebar first. Take off the battery cap and put in a new battery. The display is using a battery of type CR2032. This battery is only used for the time shown on the display.

Attention: After replacement the button battery, please set the time of the display.

11 Bicycle operation

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

To use the starting aid, press  button and turn the throttle grip. The more you turn the throttle grip, the faster your bike will run. The starting aid lasts maximum 10 seconds, then the motor support will stop.

When you start to ride your bike normally with pedalling and you wish to have motor support, you have to turn the throttle grip for one second to release the motor power. This will release the motor power and you get motor support during riding. Afterwards you do not have to turn the throttle grip again. Turning the throttle grip once is only necessary during starting. Afterwards the bike is controlled with pedalling and your cadence sensor. If you stop pedalling but your bike is still running, the motor does not support you. If you start to pedal again, the motor support will start again. You do not have to turn the throttle grip again.

12 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. So please take off the fuses from the battery for this purpose.

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

13 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.

- 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 an 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.

14 Error search

Problem	Possible reason	Remedy
Electric kit can not be switched on. No lamp is shining.	<ul style="list-style-type: none"> • Battery is empty • Battery fuse broken • Main cable broken • Controller broken • Display broken • Display cable broken 	<ul style="list-style-type: none"> • Charge battery • Check or replace the fuse • 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 fuse broken • Battery is broken • Carrier is broken • Connector broken • Controller got too warm • Controller is broken 	<ul style="list-style-type: none"> • Charge battery • Check or replace the fuse • 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 	<ul style="list-style-type: none"> • Test new charger • Test new battery
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 dealers site!

<p>Charger is connected with the battery and a receptacle with 230 Volt. No lamp is shining.</p>	<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
<p>Charger is connected with the battery and a receptacle with 230 Volt. The red lamp is shining.</p>	<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

15 Certificate of Conformity

CE-Konformitätserklärung

Firma: Schachner GmbH
Anschrift: Gewerbepark Pölla 6
A-3353 Seitenstetten

Produkt: Mittelmotorantrieb **Typ:** MM13
Bezeichnung: Mittelmotorantrieb **Geräte-Nr. Radnabenmotor:** Typ: MM13
Mittelmotorantrieb **Geräte Nr. Ladegerät:** Typ: MM13

Für das bezeichnete Produkt wird bestätigt, daß es den wesentlichen Anforderungen der folgenden Europäischen Richtlinien entspricht:

Die Übereinstimmung des Produktes mit den Richtlinien wird nachgewiesen durch die vollständige Einhaltung der angeführten harmonisierten und nicht harmonisierten Normen:

2004/108/EG EMV-Richtlinie

Richtlinie des Europäischen Parlaments und des Rates vom 15. Dezember 2004 zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit und zur Aufhebung der Richtlinie 89/336/EWG

EN 61000-3-2:2006
EN 61000-3-3:1995 + A1:2001 + A2:2005
EN 55014-1:2006
EN 55014-2:1997 + A1:2001

2006/95/EG Niederspannungsrichtlinie

Richtlinie des Europäischen Parlaments und des Rates zur Angleichung der Rechtsvorschriften der Mitgliedstaaten betreffend elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen

EN 60335-1:2002 + A1:2004 + A11:2004 + A12:2006
EN 60335-2-29:2004

97/24/EG Richtlinie zweirädrige, dreirädrige oder vierrädrige Kraftfahrzeuge

Richtlinie des Europäischen Parlaments und des Rates vom 17. Juni 1997 zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über bestimmte Bauteile und Merkmale von zweirädrigen, dreirädrigen oder vierrädrigen Kraftfahrzeugen

EN 55025-2003

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Seitenstetten, den 10.04.2013

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Franz Schachner
(Geschäftsführer der Schachner GmbH)

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, sichert jedoch keine Eigenschaften im Sinne des Produkthaftungsgesetzes zu.

16 Technical Data

Motor	Central motor Nominal power: 250 Watt Maximal power: 400 Watt 90 revolutions per minute
Battery	Li-Ion-battery pack with 9Ah/36V (324Wh) Li-Ion-battery pack with 11Ah/36V (396Wh) Riding distance: 9Ah: 50-70km 11Ah: 60-80km
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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