User manual

Central motor MM15
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 25 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

Schachner GmbH, Gewerbepark Pölla 6, A-3353 Seitenstetten,
Tel. +43 (0) 7477/42973, Fax DW 13, UID Nr.: ATU52754700
office@elektrobikes.com, www.elektrobikes.com
1 Index

1 Index ........................................................................................................ 3
2 Warranty ................................................................................................. 5
3 Scope of supply ..................................................................................... 7
4 Driving operation .................................................................................. 9
5 Function description: Motor ................................................................. 10
6 Function description: Carrier ............................................................... 10
7 Function description: charger ............................................................... 11
8 Function description: Battery ............................................................... 12
9 Handling and function of the LCD-display ..................................... 14
10 Handling and function of the LCD-display handle grip ....... 18
11 Bicycle operation ............................................................................... 20
12 Disposal ................................................................................................. 21
13 Safety Guidelines ................................................................................ 21
14 Error search ....................................................................................... 23
15 CE Declaration of Conformity ............................................................. 25
16 Technical Data ..................................................................................... 26
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 1\textsuperscript{st} 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.

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 (just with display in the middle of the handle bar)
- LCD-display in the middle of the handle bar or handle grip
- 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 battery / 11Ah battery / 15Ah battery carrier
  12 Ah battery / 14Ah battery frame version

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 or handle grip

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.

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.

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.
The best time for recharging the battery is at night. So the battery will be fully loaded next morning. Over-loading 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 or frame version
- riding distances: 9Ah: 50-60km; 11Ah: 60-80km; 15Ah: 80-100km, 12 Ah: 70-90km, 14Ah: 80-100km
- weight: 9Ah: 2,8kg 11Ah: 3,0kg 15Ah: 3,1kg 12Ah: 2,5kg 14Ah: 2,6kg

- 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.

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
+ this button to adjust the power assist. Default is ECO
mode.

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)

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

ODOGRAPH (ODO)

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

MOVEMENT TIME (TIME)

Show movement time. Long press the ⌚ button for 2 seconds to zero cleaning.
**AVERAGE SPEED (AVG)**

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**

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
E08: Under voltage alarm

**Hiding function**

To enter the hiding function, you should press \[\text{i}\] and [\text{\&}] for 3 seconds on start-up interface. Then all the items show up. Then press \[\text{i}\] to choose the functions: “ODO”, “TRIP”, “AVG”, “TIME”, “d1”, “cc”, “km/h”, “6 km/h”, “SD”, “A”, “M”, display version.
**Wheel Diameter (D1)**

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**

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)**

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 Handling and function of the LCD-display handle grip

1. On/Off button: Press this button to switch on the display. On the Display appears “Schachner”. Hold this button for long time to switch off the Display. On the Display you can see the words “Auf Wiedersehen”.

2. Information button: Press this button to switch between kilometres per day and total kilometres.

3. ODO/TRIP: ODO means the total amount of kilometres. TRIP means the kilometres per day. The default setting is ODO.

4. Shows the total amount of kilometres or the kilometres per day in km/h or Mile/h.

5. Supporting levels: Turn the handle forwards or backwards to choose between the different supporting levels. A choice of 1-4 is possible however the support can also be deactivated.

6. Shows the current speed in km/h or MPH.

7. Battery indicator: If the battery is completely loaded the indicator shines green. If the battery is exhausted the indicator turns into red.
8. Defects will be shown with an error code in red on the display.

9. **Bicycle light indicator:** Normally the bicycle light is switched off. Shortly press the button to switch on or switch off the bicycle light.

**Walk assist function**

If the walk assist function will be activated a symbol below the bicycle light indicator appears. Turn back the handle and hold it in this position to switch on the support. To finish the walk assist function, turn the handle into the starting position.

**ADJUSTMENTS:**

Press ⌘ and ⌜ at the same time to get into the submenu.

Now you can change several parameters:
- Wheel size adjustable between 14” and 30”
- Switch on walk assist/ switch off walk assist
- Max. speed power adjustable between 15-45km/h
- Units put as km or mile
- Number of magnets in the spokes adjustable between 1-15
- Display function to drive in the night or on day

If you are in the menu turn the handle forwards or backwards to change the values. To reach the next parameter press the button ⌏.
To leave the submenu, press the button. The settings will be automatically saved.

11 Bicycle operation

Insert your battery in the carrier until it snaps, then ‼️ it is locked. Press the button on the display to switch the system on. Please note: when you switch the system on, you should not drive with the bike, it should be arrest and there should be no force on the pedals. Then wait, until the battery indicator on the display is filled, then the bikes is ready!

To use the starting aid on the LCD Display in the middle of the handle bar, press “-“. The starting aid will support your as long as you hold the button.

To use the starting aid on the LCD Display handle grip, turn the handle down and hold it in this position. 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.
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.

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.

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!
- Project 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 currant and automatically cut off after charging is very important for the lifetime of the battery.
## Error search

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible reason</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric kit cannot be switched on. No lamp is shining.</td>
<td>• Battery is empty</td>
<td>• Charge battery</td>
</tr>
<tr>
<td></td>
<td>• Main cable broken</td>
<td>• Check the main cable</td>
</tr>
<tr>
<td></td>
<td>• Controller broken</td>
<td>• Test new controller</td>
</tr>
<tr>
<td></td>
<td>• Display broken</td>
<td>• Test new display</td>
</tr>
<tr>
<td></td>
<td>• Display cable broken</td>
<td>• Test new display cable</td>
</tr>
<tr>
<td>The controller can be turned on but turns off automatically itself after a short time when use the throttle grip.</td>
<td>• Battery is empty</td>
<td>• Charge battery</td>
</tr>
<tr>
<td></td>
<td>• Battery is broken</td>
<td>• Test new battery</td>
</tr>
<tr>
<td></td>
<td>• Carrier is broken</td>
<td>• Test new carrier</td>
</tr>
<tr>
<td></td>
<td>• Connector broken</td>
<td>• Test new connectors</td>
</tr>
<tr>
<td></td>
<td>• Controller got too warm</td>
<td>• Cool down the controller and try again</td>
</tr>
<tr>
<td></td>
<td>• Controller is broken</td>
<td>• Test new controller</td>
</tr>
<tr>
<td>You can hear a „crack“ from front wheel under pollution.</td>
<td>• Not enough grease on the freewheel or toothed wheels in motor</td>
<td>• Let the freewheel and toothed wheels grease with molykot-grease</td>
</tr>
<tr>
<td></td>
<td>• Spokes are loose</td>
<td>• Fix the spokes</td>
</tr>
<tr>
<td>The range of the battery is to short.</td>
<td>• Charger broken</td>
<td>• Test new charger</td>
</tr>
<tr>
<td></td>
<td>• Battery broken</td>
<td>• Test new battery</td>
</tr>
<tr>
<td></td>
<td>• Check the bike for free movement</td>
<td>• Test brakes, wheels and chain</td>
</tr>
<tr>
<td></td>
<td>• Have a look at the temperature</td>
<td>• Charge battery in temperature room</td>
</tr>
<tr>
<td>The motor turns until it reach 25 km/h also without pedalling</td>
<td>• Kit has been set as E-Bike</td>
<td>• Change to Pedelec-System only possible at your dealer’s site!</td>
</tr>
</tbody>
</table>
| Charger is connected with the battery and a receptacle with 230 Volt. No lamp is shining. | • Charger broken  
• No electricity in the receptacle | • Test new Charger  
• Check the receptacle |
|---|---|---|
| Charger is connected with the battery and a receptacle with 230 Volt. The red lamp is shining. | • Contacts are oxidizing  
• Charger broken  
• Battery broken | • Clean the contacts with contact spray  
• Test new Charger  
• Test new Battery |
# CE-Konformitätserklärung

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

<table>
<thead>
<tr>
<th>Produkt:</th>
<th>Mittelmotorantrieb:</th>
<th>Typ: MM15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bezeichnung:</td>
<td>Mittelmotorantrieb</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mittelmotorantrieb</td>
<td>Tyyp: MM15</td>
</tr>
<tr>
<td></td>
<td>Geräte Nr. Ladegerät:</td>
<td>Typ: MM13</td>
</tr>
</tbody>
</table>

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

### 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 55014-1:2006
- EN 15194:2009 +A1

### 2006/95/EG Niederspannungsrichtlinie
Richtlinie des Europäischen Parlaments und des Rates zur Angleichung der Rechtsvorschriften der Mitgliedstaaten betreffend elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungs- grenzen

- EN 60335-2-28:2004

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

EN 60026-2003

Fertigungstätte: Schachner GmbH  
Straße / Nr.: Gewerbepark Pölla 6  
PLZ / Ort: A-3353 Seitenstetten

Seitenstetten, den 19.08.2014

SCHACHNER GmbH  
Gewerbepark Pölla 6  
A-3353 Seitenstetten  
Tel.: 0664 705 307  
Fax: 0664 705 073  
email: office@elektroikas.com

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 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)
Li-Ion-battery pack with 12Ah/36V (432Wh)
Li-Ion-battery pack with 14Ah/36V (504Wh)

Riding distance:
9Ah: 50-60km  11Ah: 60-80km  15Ah: 80-100km
12Ah: 70-90km  14Ah: 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!