



INSTRUCTION MANUAL



E-DRIVE FOR BICYCLES

PREFACE

Dear customers and cycling fans!

From now on, your cycling experience will be enriched by a whole new dimension. Thanks to our Austrian invention, previously inaccessible trails and destinations are reachable at the mere touch of a button - and all within a healthy pulse range! So now there's nothing to stop you getting out for a leisurely, yet fitness-enhancing, bicycle ride with your partner or group of friends.

A bicycle should remain a wonderful piece of sport equipment. The functions and handling characteristics of your bicycle do not change by the system. Because of the small extra weight of less than 2 kilograms you can use the bicycle further without reservation. From the outside you can only see the small button on the handlebars, nothing else.

Please read these operating instructions carefully and keep the booklet for future reference!

...RIDE ON(E)!

Your vivax assist Team

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1. FOR YOUR SAFETY

1.1 Introduction

In this instruction manual, dangers and information are indicated by the following symbols:



Warning!

Signifies danger arising from a product, which could lead to serious physical injury or even death, if in adequate precautionary measures are not taken.



Attention!

Signifies dangers, which can lead to minor physical injuries or damage to the product when the appropriate precautionary measures are not taken.



Danger notice: burn risk.



Note!

Refers to useful, additional information and tips for handling the product.

1.2 Intended conditions of use

The vivax assist is designed exclusively as an auxiliary drive to physically assist the cyclist. Using it in any other way does not comply with our conditions. The manufacturer / supplier shall not be liable for damages arising from misuses. The operator bears the sole risk.

The drive is not certified for competition.

Using the product in compliance with conditions also involves observing the information included in this instructions manual regarding operation, safety regulations, as well as maintenance and inspections.

Consider the operating and storage temperatures of the components.

Protect the drive unit and the battery against extreme temperatures. The components (particularly the battery) can be damaged by extreme temperatures.

1.3 Safety information

- Familiarise yourself with the operating instructions before starting the vivax assist!
- Note the instructions from the bicycle manufacturer!
- Note the safety information and instructions for operation and maintenance of the product in this instruction manual! To not adhere to the safety and care references can lead to damages of the product and / or damages / injuries of the rider.
- Conduct a careful inspection before each cycling-tour!
- It is recommended to make the first experiences with the system away from traffic.
- With the distribution the highest rpm is stored.
Store this individually when cycling - see page 15.
- Only clean and perform maintenance work when the battery has been removed. Do not perform any repairs or maintenance work, you are not qualified for!
- Keep children away during maintenance work!
- Assure that the push-button-plug in the saddle bag is connected (black plug 6-pin).
- Do not use / store the system at sub-zero temperatures. It is possible that thereby the electronic control and the battery will be damaged and will not work.
- The drive is not suitable for people with cardiac pacemakers (no EMV certificate available).
- Never brake suddenly (also with a raised rear wheel) while the drive is running and never pedal backwards with full strength!
- Never pull the seatpost completely out of the frame and then lower it only to the fixing ring on the seat post. Avoid rotating motion and force, when highering and lowering otherwise the cables between motor-gear-unit and electronic control could be damaged.

- The vivax assist does not have a speed limiter at 25 km/h and is not certified for public streets. As an option you can buy this blocking.
- Damages on the drive unit and the electrical components must be repaired immediately by an authorized specialist dealer.
- An unconventional manipulation i.e. reinstalling the system for yourself or changing it in any form expires any replacement / the warranty is void. The drive may be dismantled and inserted only by qualified specialist dealers and with the special tools.
- Never clean the bicycle with a high-pressure cleaner or water jets (use clear water and a sponge) and store it dry. Immediately contact an authorized special dealer at water entry.
- You should switch the system off in the following situations: when you ride downhill, in heavy traffic, when approaching crossings or obstacles, critical situations.
- After ending of each journey, the battery should be removed, recharged and stored out of the reach of children.
- Transport: Protect seat post and saddle bag from water (particularly in the case of transport at the car) - battery should always stowed away separately! Inquire before a flight by your airline.
- Further safety references to the battery as well as the battery-management, you can find on page 12.
- Take the time and allow your specialist dealer to help you explain the vivax assist based on the check list (page 21). Only with a filled out check list we can offer a free support and guarantee a fast support in case of a complaint.

2. TECHNICAL SPECIFICATION

2.1 Assembly

The vivax assist is an additional electric drive for bicycles, it supports your own muscle power.

Propulsion is provided by an electric drive, the vivax assist gear box works in combination with the bottom-bracket. The power supply comes from a high performance battery, which is stowed away in the saddlebag. The drive is activated by the push-button on the handlebar.



Operating elements

- 1 Push-button
 - Switching the drive on / off
 - Programming the pedal frequency
- 2 Housing of the push-button

Drive unit

- 3 Controller: electronic control unit built in the provided seat post
- 4 Motor
- 5 Gear-unit
- 6 Free-wheel
- 7 Bevel gear pair: Power transmission from the drive unit to the axis of the Hollowtech 2 crank

Power supply

- 8 Saddlebag: Storage for the battery and cables
- 9 Battery (it's possible that the type varies)
- 11 Connection plug for the battery to the charger / controller

Battery charger

- 12 Battery charger with a connecting cable for the battery
- 13 Power cable for the battery charger. If the grounding-type plug is not correct for your country, please use an adapter or ask your authorized special dealer.
- 14 Fixing ring – max. insert depth of the seat post. Must not be adjusted. Never pull out the seat post completely from the seat tube (10 cm must stay in the seat tube).

2.2 Technical data

Motor	Brushless 200 watts D.C. motor
Gear-unit	gear set with free-wheel
Output to the crank	bevel gear pair from special steal
Weight - mechanical drive	app. 730 g.
Wattage at full pressure	max. 5 A
Electronic control unit	control module installed in the seat post
Weight - electronic control unit	app. 120 g.
Battery	30 V LiIon; 5,5 Ah / 8,25 Ah or the like charge announcement, BMS
Operating time	min. 70 / 100 minutes at maximum load
Recharging time	app. 3-6 hours, depends on the type of the battery
Life span	within of app. 500 recharging cycles, the capacity falls to about 70 %
Weight	850 g. / 1250 g.
Battery charger	30 V / 65 W or the like (3 A)
Function push-button	on / off, programming the pedal frequency
Seat post model	Truativ Hussefelt or the like – length 350 mm, 300 g. Option: length 270 mm for small bicycles (original from vivax assist)
Suitable crank set	Shimano Hollowtech II - axial length 120 mm for example: Deore, SLX, XT, XTR or Ultegra Triple

3. BEFORE YOU CYCLE

3.1 Installation / removing the battery

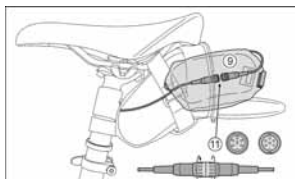
Use only original-batteries which became certified from the manufacturer. The battery is stowed away in the saddlebag, where it is protected from the rain (but it is not water proof).

Remove the battery in the following situations:

- When recharging (never recharge unattended, never recharge it on a flammable ground or in the saddlebag),
- after each journey (store safely in the house by room temperature),
- during maintenance work on the bicycle,
- in the event of low temperatures (sub-zero) or high temperatures over 30°C,
- during long breaks, e.g. winter,
- during transport,
- when you ride downhill / on trials (through heavy vibrations the saddlebag can break),
- in heavy rain,
- during breaks to avoid unauthorized operation by a third person.

Installing the battery

- Open the zip fastener of the saddlebag (not completely to avoid that the zip doesn't close anymore),
- store the battery (9) in the saddlebag,
- connect the two cables with the plug (11): turn the drawn in „1“ to the bulge. Hold both ends of the plugs on the rubberized cable end, keep bulge and nose above the other and plug together. Then turn the bayonet fixing up to the „click“.
- close the saddlebag.



Removing the battery

- Open the zip fastener of the saddlebag (not completely to avoid that the zip doesn't close anymore),
- open the socket cap and disconnect the connection (11) carefully. Don't pull on the cables,
- watch out for the left cables from the push-button and the rotation speed sensor in the saddlebag.

3.2 Recharging and storing the battery



Note!

- The charge announcement (9a) can be activated with a pressure on the black point and expires again after 4 seconds.

When the battery is fully loaded 5 LEDs are shining. When the battery is empty the last LED flashes at <20 %.

Attention: charge level indicator is only a guideline.

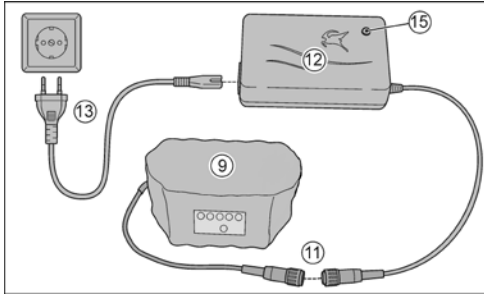
- Never leave the battery unattended when recharging, or recharge on a flammable material and near flammable materials or in a box (heat accumulation).
- Always disconnect the battery charger from the mains plug after each recharging process!
- Recharging takes app. 3-6 hours – depends on battery capacity.
- Recharge it again after 3-6 months and never store it unloaded. The battery must be stored with 60% capacity (never less) i.e over winter

Note: If the battery is stored empty for a length of time. It can be damaged despite of only small self discharge. In addition, it should never be left attached to the battery charger.

- Do not use the battery at sub-zero temperatures or at more than 30 °C.
- Store it dry and never at sub-zero temperatures or at more than 30 °C. Do not leave the battery in direct sunlight in the car.

Recharge the battery

- Plug the power cable (13) into the battery charger and the power point,
- connect the battery (9) to the battery charger (12) using the plug (11).

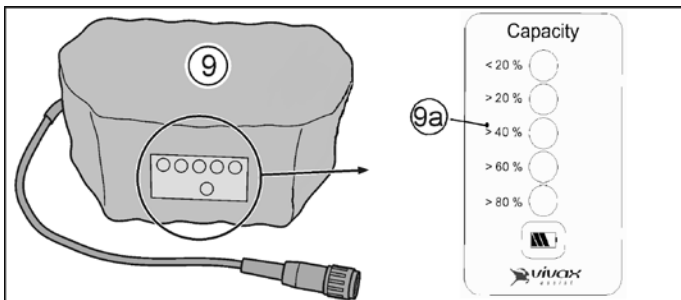


Recharging process battery (9)

If only one LED at the battery flashes, the battery is nearly empty. In the course of the recharging more and more LEDs are shining. If four LEDs shine and the fifth LED flashes, the battery is loaded to 80%. If all five LEDs shine the battery is fully loaded (app. 96 %).

Recharging process charger (15)

- Start: LED flickers green
- Battery is being recharged: LED flickers green
- Battery is fully recharged: LED shines green continuously
- Stand-by: LED out
- Recharging takes app. 3-6 hours – depends on battery capacity



- Once recharging is complete, take the battery away from of the battery charger, disconnect the battery charger from the power point and install the battery into the saddlebag or store it as described;
- see chapter “Installing the battery” on page 9 and 10.



Note!

After the recharging process the LED on the charger (15) shines green. If you want to charge a new battery, make sure the battery charger is disconnected from mains for at least for 1 minute. When you reconnect it, the memory function on the battery charger will reset.

3.3 Battery management / safety references



Load the original battery before the first time of use once completely fully and note the loading and storage regulations!

Charge announcement: Press „Push Button“ on the battery. The charge is indicated by 1-5 LEDs (only guide value) and expires again after 4 seconds.

- Never throw the battery in the fire, never let it fall, don't damage it, don't manipulate it and never short circuit it - > danger of explosion!
- Use only batteries which are certified from the manufacturer. The custom of other batteries can lead to injuries / fire / defects at the drive. The manufacturer assumes no liability and warranty.
- Do not open the battery. There is the danger of a short-circuit. With opened battery any guarantee or warranty is void.
- With wrong application liquid can withdraw from the battery. Avoid the direct contact thereby. If the liquid comes into the eyes, visit a doctor immediately.
- With damages and inappropriate use of the battery steams can withdraw. Supply to fresh air and visit a doctor at physical complaints.
- Load the battery never unattended, never in an flammable environment and only with the battery charger, which was provided by the manufacturer.
- The life span of the battery can be extended, if it is well maintained and operated and stored particularly at the correct temperatures. With increasing age the capacity of the battery will be reduced also with good care - see load cycles.

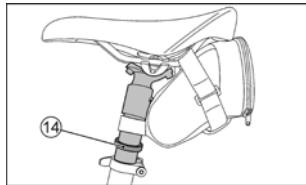
3.4 Adjusting the seat post

The electronic control is installed in the seat post. To avoid damages to the electronics and the cables, the following points must be noted:



Attention!

- Never take the seat post completely out of the seat tube! Should a replacement be necessary, please contact an authorized specialist dealer.
- Never push the seat post into the seat tube further than to the fix-ring (14) and never pull out the seat post from the seat tube more than to the min. insertion-depthness (10 cm). Never push it into the seat tube or pull it out with violence. Re-lubricate the seat post. So you can adjust it more simply and protect the electronics against water intake. Never adjust the fix-ring (14) – the warranty will be invalid.
- When adjusting the height of the seat post, avoid circular motions as far as possible; cables can be damaged! Further it's possible that you have to retighten some cables (of the push-button) from the saddlebag.
- The electronic control is not suitable for operation at sub-zero temperatures.



3.5 Saddlebag

The saddlebag is an integral part of the vivax assist. The cables from the electronic control to the battery / push button / speed sensor run through the bag.

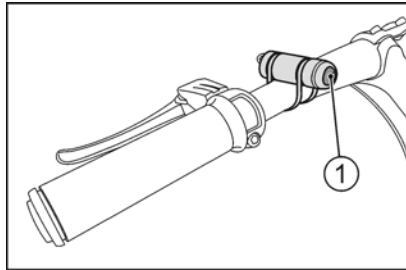


Attention!

- Do not unfasten or detach the saddlebag from the mounting (cables can be damaged)!
- Should it be necessary to replace the saddlebag, before you disassemble it, all of the socket connections must be disconnected and all of the cables - together with the grommet - must be pulled out carefully, then remove it.

4. OPERATION AND PROGRAMMING

The vivax assist is activated by the push-button (1). The push-button switches the motor on and off and also stores the pedal frequency.



4.1 Switching the motor on / off

Switching on

Push the push-button for app. 1 second, the system will be activated with the last stored pedal frequency.



Danger!

Only activate the drive while cycling.

If you switch the drive on with a raised rear wheel, the pedals and the rear wheel will be propelled immediately; danger of injury!

Switching off

A short activation of the push-button switches the drive off again.

The drive switches off automatically in the following situations:

- Braking of the bicycle (NEVER abrupt),
- pedal frequency less than app. 15 revolutions per minute (the drive cannot be started also),
- when the battery is empty,
- if the crank stays still (drive switches off immediately).

4.2 Storing the pedal frequency

The vivax assist supports you, when your own pedal frequency is lower than the stored one. Therefore, store the pedal frequency while travelling on level ground so that the drive can then be started with the desired setting. You will attain the best assistance at a pedal frequency of app. 60-70 revolutions per minute. Pedal frequencies under 50 rpm or over 90 rpm will not be stored. This function is similar to a kind of pedaling cadence cruise control.

Pedal frequency storage process – to your individual frequency

- Switch off the drive to store,
- cycle with the required pedal frequency,
- keep the push-button pressed for min. 5 to max. 10 seconds; When releasing the push-button the frequency you even pedal get stored. After the storage process the system is activated.
- Push the push-button again briefly, the drive will switch off.

Pedal frequency storage process – to the highest frequency:

You store the highest pedal frequency

- **while riding.**

- When the drive is off, keep the push-button pressed for min. 10 seconds.
- **while stationary:**
- When the drive is off, keep the push button pressed for min. 10 seconds then keep the rear wheel raised.

After the memory procedure the system is activated. Press the push-button again briefly and the drive is switched off.




Danger!

If you switch the drive on with a raised rear wheel, the pedals and the rear wheel will be propelled immediately; danger of injury!

Checking the stored pedal frequency:


While stationary:

- Activate the drive with a raised rear wheel and lowest gear.
-  If you switch on the drive with a raised rear wheel, the pedals and the rear wheel will be propelled immediately; danger of injury.

While riding:

- Reduce your personal pedal frequency,
- switch on the drive using the push-button; the drive must noticeably assist pedaling,
- press the push-button once more and the drive will switch off.


Note!

 The pedal frequency will remain stored until the frequency is replaced by a new one. If you pedal faster than the stored pedal frequency, you will “over-take” the drive and will no longer be supported by the system. If there are any questions please contact your authorized special dealer.

4.3 Cycling tips

- Pay attention to the safety information in this operating instructions and the bicycle manufacturer’s instructions!
- In order to guarantee the battery lasts for the durations of your tour, only use the drive when you feel you need it!
- Always start to cycle with the drive switched off! Switch on the drive when you are safely riding. The vivax assist has no start-up-help.
- To avoid unauthorized operation by a third person, always remove the battery when leaving the bicycle, e.g. during a break!

Note!

 Note about outdoor transport by car / transport on car bike racks:
When it rains, the bicycle is exposed to very large amounts of water. Protect the electrical components, such as push-button, saddlebag and seat tube, with a water-tight, wind-proof sheet.
Disconnect the battery and take it out of the saddle bag and transport it separately in the car (also at transport in the car).

5. SERVICE AND MAINTENANCE

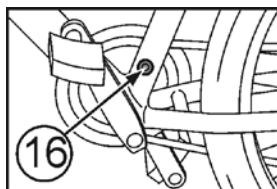
The vivax assist is maintenance-free. However, a thorough inspection before each cycling tour is absolutely necessary for your safety!

5.1 Inspection

- Plug connections in saddlebag are fix: battery (bayonet fixing), push-button (6 pole. plug), plug of the speed limiter (3 pole. plug - only with blocking at 25 km/h)
- Check cables and plugs. Damaged cables and connections must be replaced immediately. Please contact your specialist dealer.
- Inspect the saddlebag fastening for damages and mechanical security.
- Check the saddlebag for tears and damage.
- Control the battery charge.
- Perform a function test.
- After an accident, both the bicycle and the vivax assist should be inspected by an authorized dealer.

5.2 Maintenance

- Never unfasten the motor mounting screw (16) on the seat tube!
- Never disconnect the cables and plugs (except battery).



5.3 Cleaning

- Always remove the battery and close the saddlebag before cleaning, to ensure the plugs are protected.
- Only clean your bicycle with clear water and a sponge!
- Never use a high-pressure cleaner or water jets. The electrical equipment and electronics of the drive are not designed to cope with this!
- Do not turn the bicycle upside down when you clean it.

5.4 Service points

You can find an overview of the authorized vivax assist specialist dealers on the internet at

<http://www.vivax-assist.com/en/haendler/haendlersuche.php>

6. 6. TROUBLESHOOTING

Only conduct repair work yourself if you have the necessary knowledge and tools!

Should it not be possible to positively identify the cause of a problem or you cannot exclude that the problem occurs again, please contact an authorized specialist dealer.

Problem	Cause	Corrective Action
The drive does not start	Plug to the battery is loose; plug connection of the push-button is loose in the saddlebag	Check the plug connection; put the plug on and off once (don't pull on the cables)
	Battery is damaged	Visit an authorized specialist
	Push-button is damaged	Visit an authorized specialist
The drive switches off independently	Battery is empty	Recharge the battery or replace it with a recharged one
There is too little support	Pedal frequency is too low	Change into a higher gear and increase your own frequency (max. up to the stored frequency)

7. WARRANTY / LAW

It shall apply the warranty conditions for end-customers of Austria.

Gruber Antrieb GmbH & CO KG grants the warranty limited to production and material defects, which were present at the time of the distribution, limited of parts supplied by Gruber Antrieb GmbH & CO KG.

The warranty does not refer to the normal wear or to damages, which results to improper treatment, abuse, for a prupose usage in adequate care or accidents. This also includes assebly errors by a not authorized dealer / person or installation without the special tools.

This applies in particular also with already used batteries, which exhibit clear customs traces. Performance losses at battery are no production errors. Batteries are subjects of consumption and are subjects to a certain aging (see load cycles).

In no case Gruber Antrieb GmbH & CO KG is responsible for consequential- and besiders damages such as these may have originated.

With the help of this drive your bicycle becomes a Pedelec (pedal, electric and cycle), which describes a special type of electrical bicycle, with which the cyclist must pedal and get supported by the drive.

The bicycle, as well as the electric motor must be subjected the StVo, if this should be certified for the public traffic.

Electric motor: It must be installed a blocking at 25 km/h. This blocking can be ordered with the vivax assist. For a later installation, please contact your specialist dealer.

If this blocking is installed, the Pedelec is exempt also from the duty of insurac-ne (Austria).

In some countries helmet obligation exists. We recommend always to wear a helmet when riding for your security.

8. DISPOSAL



According to the European Guidelines, electrical devices / tools that are no longer usable and defective or used batteries must be collected separately and disposed of in an environmentally correct manner.

Please return batteries that are no longer usable to an authorized special dealer.

Do not throw the parts into the household rubbish!

9. BRIEFING CHECK LIST

Take the time and allow your specialist dealer to help you explain the vivax assist based on the check list. Only with a filled out check- ...list we can offer a free support and guarantee a fast support in case of a complaint.



Note!

Gruber Antrieb GmbH & CO KG can revise contents of this operating instructions in any time without further notifications.

Instructions handed out.	
Connecting and disconnecting battery demonstrated.	
Activate and deactivate the drive on rear stand.	
Programming pedal frequency – very slow app. 50 rpm (no support with faster pedalling).	
Programming pedal frequency – very quickly (min. 90 rpm).	
Programming pedal frequency to suit customer.	
Test drive: preferably on a gentle slope once with and once without drive support – customer pedal frequency must remain below the programmed one or they will not enjoy the full effect.	
Could the customer feel the support of the drive?	
Instruction of battery given: store charged at 60 % max. 3-6 months, use, charge and store it not at sub-zero temperatures or over 30°C.	
Battery should never be dropped – can be fire hazard.	
Lower the seat post only as far as the fixing ring and pull out only up to the mark – fixing ring must not be released – never use force – wires could be damaged!	
Never loosen the motor mounting screws in the seat tube (app. 7 cm over the bottom bracket)!	
Seat post may need extra grease – especially when it is used in bad weather.	
Do not clean with high-pressure cleaner – water must not get into the seat tube!	
Jerky, aggressive backpedalling can cause damage and must be avoided!	
Programming of personal pedal frequency carried out and understood?	
Regularly check the tightness of the connectors in the saddlebag.	
No speed limiter at 25km/h, unless ordered and installed	
Has the customer received everything he ordered (e.g. short seat post, pedals, extras...)?	
Bicycle: gear, suspension fork, airpressure, saddleheight, stem, ...	
Gruber Antrieb GmbH & Co KG takes no liability for selfinstallation or improper handling and any consequential damages. Defects must be reported immediately, bring the invoice with you.	

Advisory staff member:

Instruction carried out/ product checked (customer's signature):

Date: _____

Stamp:

10. SHORT DESCRIPTION

Battery management: For best results please charge the battery fully the first time you use it and take care for the loading- and storage instructions.

Charge level indicator: When pressing the button on the battery, the current charge is indicated by 1-5 LEDs (vague guideline) and expires after 4 seconds again.

Charging: During charging the LED on the charger will light up green; the battery is not fully charged until you can see a continuous green light (after app. 3-6 hours – depends on the capacity). Never leave the battery while recharging on a flammable material or in a box (saddlebag). Storage: Do not charge, use or store in temperatures below freezing or above 30°C. Over the winter the Lilon battery pack should be kept charged at about 60 % (never lower). It will need to be recharged after about 3-6 months.

Transport: Never leave the battery connected when transporting the bicycle. We recommend storing it well packed separately – not in the saddlebag. Fire risk can happen when severe damage occurs. Inquire before a flight by your airline.

Operating the drive: Connect the charged battery in the saddlebag to the large black round connection plug. The small black, 6-pin connector (push button – do not separate or rip from the cables) must also be connected! The small 3-pin connector needs only be joined to the speed sensor if a speed limiter (25km/h limit) has been installed.

Close the saddlebag! Only use the push button while driving – never when stopped! Quick press (about 1 second) of the push button and the drive runs with the pre-programmed speed. Press again and the drive switches off. The drive is not suitable for use in sub-zero temperatures.

Store the pedal frequency: If you pedal faster than the pre-programmed speed, you overtake the drive and it no longer has its full effect – store a higher speed or drop back (expend less of your own energy)!

For storing the highest number of revolutions (RPM) keep the push button pressed for at least 10 seconds.

You can store your own personal frequency (RPM). Turn the required RPM with the push button pressed for 5 seconds. After releasing the button the stored frequency is available for use.

The frequency of the pedals can be controlled by raising the rear wheel and pressing the push button (CAUTION – pedals begin to turn immediately – take care to avoid injury! – Do not brake abruptly). There must always be a minimum of 15 rpm – below that the drive switches off automatically for safety reasons. The drive has an optimal support at a speed of min. 60 rpm. Disconnect the battery after each trip and take it with you into the house (especially at sub-zero temperatures)! This is also a protection against unauthorized use.

NOTIZEN



...RIDE ON(E)!

WWW.vivax-assist.COM

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