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HP Velotechnik
www.hpvelotechnik.com

Operating manual and service instructions
Go SwissDrive system for HP Velotechnik

Version: Mar. 2015


Scorpion


GC SwissDrive.
09:23
SPEED
km/h
23.7
LEISTUNG
43
WATT
REICHWEITE
80
KM
STRECKE
143 KM
KONFIGWERT
200 KM

Introduction

Dear Customer,

Thank you for having bought a HP Velotechnik bicycle or s-Pedelec with the GO SwissDrive system. This drive system stands for high Swiss quality and it will give you a great deal of pleasure and enjoyment when riding due to its dynamic driving properties.

The translation of the original instruction manual for the GO SwissDrive system contains a great deal of important and detailed information on the proper use of the drive system, its care and maintenance and also its technology. Please take the time to read it through thoroughly.

Your pedelec/e-bike or s-pedelec will be given to you already fully assembled and ready for use by your dealer. If that should not be the case then please contact the place from which you bought your pedelec/e-bike.

This translation of the original instruction manual is a system manual for your GO SwissDrive system. You can find further information on how to handle your pedelec/e-bike or s-pedlec in your general bicycle user manual.

If you nonetheless still have any questions that are not covered in the translation of this original instruction manual, then please contact your dealer.

Please keep this translation of the original instruction manual in a safe place to answer any questions that might crop up later. Please also make this instruction manual available if you lend or pass on your pedelec/e-bike or s-pedelec to someone else.

We wish you a great deal of enjoyment and good riding with our drive system.

Your HP Velotechnik Team

Table of contents

General notes

Information about this manual

This translation of the original instruction manual refers exclusively to the use of the GO SwissDrive motor system in conjunction with HP Velotechnik cycles. Please also be sure to observe the manual that came with your HP Velotechnik cycle and all manuals issued by the individual component manufacturers.

Note: The text in grey boxes provides you information about how to handle the product or refers to a passage in the instruction manual that deserves your special attention.

Attention! This symbol warns you of incorrect actions that could result in damage to property and the environment.

Danger! This symbol indicates an imminent risk to your life or health unless you comply with the instructions given or take preventive measures.

Intended purpose and legal basis for pedelecs/e-bikes

Your GO SwissDrive system complies with the respective requirements for a drive system under standard DIN EN 15194 for bicycles that have drive assistance from an electric motor. Furthermore, your drive system complies with the requirements of directive 2004/108/EU concerning electromagnetic compatibility.

Your pedelec drive system that was built in compliance with DIN EN 15194 only provides drive assistance when you turn the pedals yourself and up to a speed of 25 km/h (18 mph). This means that there are no restrictions for you; you may use your pedelec as a bicycle without any restrictions.

Picture 1: HP Velotechnik Scorpion plus 26 e-Bike

Please consult your general bicycle user manual to determine for what purposes your pedelec/e-bike can be used, what total weight it has been approved for, and what roads and paths you may ride it on.

There are country-specific laws concerning the use of the pushing aid. It is essential to get information on this before you ride away for the first time as to whether you require (in Germany) a moped driving certificate or a class M driving license if you were born after 01.04.1965.

The laws and regulations concerning pedelecs and e-bikes are currently being revised. Read the daily press to keep yourself informed about current legislative changes.

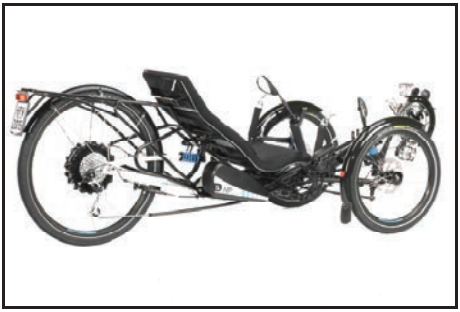
In view of the resulting higher speeds we nonetheless recommend you to use a cycling helmet and cycling glasses.

If you do not have private liability insurance, we would recommend you to takeout such a policy if you wish to use a pedelec or e-bike. Contact your insurer if you have any questions.

General notes

Intended purpose and legal basis for s-pedelecs

According to German law, the Scorpion fs 26 S-pedelec is not a bicycle but a motor vehicle class L2E (three wheeled small motorcycles with a maximum design speed up to 45 km/h).



Picture 2: HP VELOTECHNIK Scorpion fs 26 S-Pedelec

The construction speed, that is the speed that the vehicle will reach without using muscle power, is 20 km/h. With additional power from the rider's muscles, up to 45 km/h can be reached. At that speed, the motor assistance is switched of completely.

To be allowed to use the S-Pedelec on public roads, there must be an operating licence for it and it must be equipped with a insurance plate. The operating licence is provided by HP VELOTECHNIK together with the vehicle and needs to be handed out to the customer by the dealer.

The keeper of the Scorpion fs 26 must contract a motor vehicle liability insurance and will receive an insurance plate in doing so. The operating licence already assures that the S-Pedelec meets all legal requirements for taking part in public traffic in Germany by the time it is being put into operation. The rider always has to carry the operating licence and the insurance card while riding.

By the time this manual was edited the following regulations apply in Germany: The rider must wear a proper helmet while riding the S-Pedelec. To ride the Scorpion fs 26 S-Pedelec a driving license class M or AM is required.

Please catch up on present regulations in your country regarding driving licences, the use of bicycle lanes, riding on paths away from the road, wearing helmets etc. frequently.

Imprint

The content of this manual were prepared by

HP VELOTECHNIK OHG
www.hpvelotechnik.com

with the kind permission of

GO SWISSDRIVE AG
www.go-swissdrive.com

and

Zedler – Institut für Fahrradtechnik und -Sicherheit GmbH
www.zedler.de

Notes for the user

Before your first ride

Starting up fort he first time

A number of steps need to be taken first before you can put your pedelec/e-bike with the GO SwissDrive system into operation.

1. Fully charge the battery of your drive system as described in the section "Akku und Laden".

2. Make sure that you are familiar with the functions of the GO SwissDrive system.

Picture 3: Display and remote

The following is especially important:

It is absolutely essential that you are familiar with the functions of the control element as explained in the section "Notes for the user" before your first ride with the system switched on.

It is essential that you are familiar with the setting of the support levels without needing to take your hand from the handlebars or to look at the display. Thanks to the "All under control" technology and this practice you can keep your attention fully devoted to the road traffic while you are riding.

3. Make sure to become familiar with the properties and special form of travel ahead of time and off public roads. Always bear in mind that in particular the acceleration and the greater average speed will be unaccustomed for both you and other road users.

Caution! The bolts of the rear axle with the GO SwissDrive hub motor must be assembled with a torque support. The bolts must be tightened with a torque wrench to **40 Nm**.

Note: Also bear in mind that the weight of your pedelec/e-bike or s-pedelec is greater than what you have been used to with conventional bicycles, that the centre of gravity can be higher and that manoeuvring can be more difficult under certain circumstances.

Setting the control element

Once you have found a good seat position, adjust the control element before the first ride so that you can reach it easily and read all the functions. Make yourself familiar with the buttons and the display.

Riding information

Your GO SwissDrive system supports your effort at the pedals to varying degrees. You can select this at the control element. If you do not turn the pedals then you get no drive assistance. At 25 km/h / 18 mph (s-pedelec 45 km/h / 32 mph) the drive assistance is switched off. This is a legal requirement.

If you are riding downhill and want to reduce speed, then you can profit from the fact that the GO SwissDrive system has two levels in recuperation mode. This involves a system that feeds the braking energy of the motor back into the battery. Note that this system cannot replace both brakes! For that reason always use both brakes to slow down if the traffic situation or the section of road require

Notes for the user

this. Read your general bicycle user manual regarding the topic of safe braking.

In certain product series as a result of the design of the energy-saving recuperation option strong charging currents arise at speeds of more than around 50 km/h that can lead to the charging function of the battery switching off for a while. This means that due to the charging currents there is a marked braking action within a narrow speed range, but if the speed increases further this will cease abruptly when the charging switches off. Certain types of battery switch on again automatically after a few seconds and thereby cause brief and abrupt braking.

These measures that are used to protect the electronics are not defects or errors.

For that reason be prepared for these effects when riding downhill and adapt your style of riding accordingly. Also, always keep both hands securely on the handlebars when riding downhill, sit well back on the saddle and do not make any extreme or unnecessary manoeuvres, especially at high speeds. Be very careful on twisty downhill sections, for example.

Note: Note that there is no energy recuperation option when riding downhill if the battery is already fully charged.

Danger! The riding characteristics of a pedelec/e-bike or s-pedelec differ from those of a conventional bicycle of the same type. For that reason always practise first on an area with no traffic Until you are sure that you have full control and only make use gradually of the full potential of the pedelec / s-pedelec after that.

Read the tips on riding a pedelec / s-pedlec in the general bicycle user manual of the manufacturer.

Danger! The motor becomes warm after longer use. Never touch the motor during use and within another 30 minutes after use. If you have disk brakes installed, note that they too can get hot. Always let the brakes cool down before removing the wheels.

Danger! Never touch the motor or the rear wheel while using your pedelec or s-pedelec.

Before every ride

Safety of you Pedelecs/E-Bikes or S-Pedelec

Check the proper functioning and safety of your pedelec/e-bike each time before every ride. You can find details on the required steps in your general bicycle user manual. If you have any doubts, contact your dealer before your first ride.

Display of the state of charge

The state of charge of the battery is displayed by four LEDs when you press the button at the battery.

Here each LED corresponds to a state of the capacity. This means for example that if one LED is lit up and the second one is blinking then 25 to 49 % of the full charge is available, if 4 LED are lit up then 96 to 100% of the full charge is available

The display of the state of charge of the battery goes out automatically after around 10 seconds.

We recommend that you recharge the battery after each longer ride so that you can always get to your destination with full drive assistance and to extend the life of the battery

Notes for the user

as long as possible. A good rule of thumb is that you should recharge the battery when only two LEDs light up.

You can find further information on the control element in the section "Battery and charging" from page 29ff.

Brief overview of the Evo console

The Evo console is the interface between you and the GO SwissDrive system. It offers a high number of functions and setup options. The following chapter contains a brief overview and shows basic operating steps. You can find a detailed description of all functions and setups of the Evo console on page 12ff.

Picture 4: GO SWISSDRIVE EVO-Display

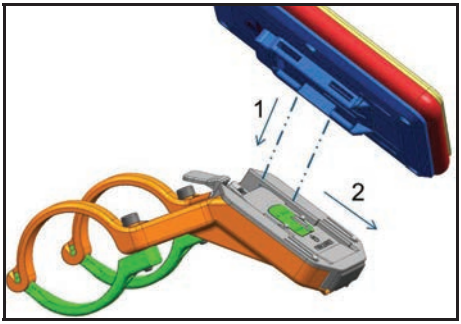
Console components

The Evo console consists of three components: docking station, remote control and display.

The display is the readout of the Evo console. The system is operated from the keys of the remote control. The docking station is the connection between display and the other components of the GO SwissDrive system. Additionally, the docking station features an USB connector to transmit data and to charge a mobile phone with a current up to 1A.

Inserting the display

Put the display to the upper edge of the docking station's receptable (1). Then slide it back (2). The display needs to lock into place in the docking station



Picture 5: Inserting the display into the docking station

To remove the display, push the lever at the upper edge of the docking station downwards and slide the display away from the stem out of the docking station.

Note: The display can be secured against unwanted removal by screwing in the screw that is located on the backside of the docking station. To be able to remove the display, loosen the screw again.

Operating the console

Console operation is done by the remote control device which is mounted next the bike's left or right grip. The remote control features five keys with the following functions:

On/Off button:

The On/Off switch activates or deactivates the whole GO SwissDrive motor system.

Notes for the user

Confirm button:

The confirm button is used to activate/deactivate several functions in the menu and to choose and confirm settings in the setup menu.

1: Main menu: Press the confirm button for more than one second to switch on/off the bicycle's lighting system. Short clicking switches between manual, automatic and flood beam mode. Note: This feature only applies to supported lighting systems.

2: Tour menu: Manual delete and reset of tour data.

3: Stopwatch: Start/stop measuring. Holding the button for more than one second saves the current lap and starts a new measure.

4: Configuration menu: Confirmation of chosen options and setups.

"+" *and* "–"*-buttons:*

With the "+" and "–" buttons you can set the assistance level while riding. The buttons are also used in setup menus to navigate between entries.

1. Assistance level: Increasing or decreasing the assistance level of the GO SwissDrive system.

2. Starting aid: Pushing the + button for a longer time activates starting aid up till a speed of 6km/h (3,8miles/hour).

3: Reverse gear: Pushing the - button for a longer time makes the bicycle going backwards (trikes only). You may need to push the pedal shortly to activate the reverse gear. Once the motor is starting to move the tricycle backwards, leave the cranks move backwards easily.

Note: The speed of these functions is being restricted to a maximum speed of 3 km/h / 1,4 mph for reverse gear and 6 km/h / 3,5 mph for starting aid. The s-pedelec system allows riding forward with up to 20 km/h / 14 mph.

4. Navigation in configuration menus: Go forward/backward to the next/previous entry

5. Setting of numerical values during setup.

Browse-button:

The browse button allows you to shift between the Evo menus.

Menus while riding

The menu structure of the Evo display consists of different menus which are accessible depending on the riding situation. While riding, for simplicity and transparency, only main, tour data, and stopwatch menus are enabled.

As long as the bike is moving, the main menu is divided into five areas: status bar, assistance level, speed, menu position, and a customizable area that is able to display several useful information about the current ride.

Status bar provides a quick overview about the current system status using certain symbols.

Assistance level is visualized by a graphic bar on the left side of the display. Operationg + and - buttons switches between five assistance levels and two levels of recuperation (generative braking). Assitance level 0 means no assistance from the motor. By clicking +, assistance level is increased, by clicking - it is decreased.

Current speed of the trike is shown digitally with one post decimal position.

Notes for the user

Note: Correct setup of the wheel circumference is crucial for correct speed indication (please refer to setup chapter).

The customizable area is able to show main menu, tour data overview or stopwatch while the bicycle is moving. The browse button allows you to switch between the menus.

Picture 6: Main menu

Note: Correct setup of the wheel circumference is crucial for correct speed indication, please refer to setup chapter "Configuration and setup options" on page 20ff.

The customizable area is able to show main menu, tour data overview or stopwatch while the bicycle is moving. The browse button allows you to switch between the menus.

Menus while parking

When the bicycle is not moving additional menus are accessible. Overall data overview, a menu to save data to external devices, and setup menu. The browse button allows you to switch between the menus.

Note: Please note that the Evo display will not show these menus while riding. In case one of these menus is displayed when the bicycle starts moving the main menu will appear automatically.

Basic setup

Before the first ride with your GO SwissDrive system some basic settings should be done. This especially refers to setup of wheel circumference, display language, and date and time.

Wheel circumference

Wheel circumference is set in the System settings of the configuration menu. The unit is millimeters. To change the value, first use the browse button to go to the configuration menu. By using "+" or "-" you can now access the System settings entry. Press the confirm button to enter the setup screen. Then, use + or - again to jump to Circumference. Press the confirm button again to be able to increase ("+" button) or decrease ("-" button) the wheel circumference. Having finished press the confirm button and navigate back to the top entry and press confirm button again in order to get back to configuration menu. Keep in mind that the wheel circumference is the basis for most calculations of the Evo console, such as speed, distance, and remaining range. If possible, have this setting done by your specialised dealer when the bicycle is handed over.

Notes for the user

Picture 7: Konfiguration menu

Date and time

Date and time are set in Date & time settings of the configuration menu. To change the value first use the browse button to go to the configuration menu. By using "+" or "-" you can now access the Date & time entry. Press the confirm button to enter the setup screen. Hour, minute, day, month, and year can be adjusted now. Use "+" or "-" to jump to the respective value. Press the confirm button again to be able to increase ("+" button) or decrease ("-" button) the value. Having finished press the confirm button to be able to access another value. At the end navigate back to the top entry and press confirm button again in order to get back to configuration menu

Language

Language is also set in the configuration menu. To change the value first use the browse button to go to the configuration menu. By using + or – you can now access the System settings entry. Press the confirm button to enter the setup screen. Use + or – to jump to the desired language. To set this language as display language press the confirm button again

Remote control button functions

Your Evo system is operated by a remote control, which can be fitted next to the handlebar grip on either side. The remote control features five buttons. A description of their individual functions is provided below.

On/Off button:

Picture 8: Remote control, On/Off button

The On/Off button is used to activate the entire GO SwissDrive motor system. Shortly after you have pressed this button, the display should come on and the entire system should be ready to go. Pressing the On/Off button again deactivates the system.

Notes for the user

Confirm button:

Picture 9: Remote control, confirm button

The confirm button is used to activate/deactivate various functions in the Evo system's menu and to select and confirm settings in the configuration menu. The confirm button has different functions, depending on which menu you are currently viewing.

1. Main menu: The confirm button has no function in the main menu.

2. Function in the trip data menu: In the trip data menu, you can use the confirm button to reset trip data manually. Please bear in mind that trip data cannot be recovered once cleared.

3. Function in the stopwatch menu: While the stopwatch menu is displayed, one click of the confirm button on the remote control starts the stopwatch. Clicking the confirm button again stops the timer. Pressing and holding down the confirm button saves the recorded time and the stopwatch is reset. However, if you want to resume timing after a break, simply briefly press the confirm button again.

4. Function in the stationary menus: In the stationary menus, the confirm button is used to confirm selected options or configured parameters. After you have navigated to the desired item using the "+" and "–" buttons on the remote control, you can use the confirm button to confirm your option selection or acknowledge that you wish to proceed with the chosen function. Examples of this include deletion of the call list in the telephone menu or your choice of language in the system settings.

"+" *and "–" buttons:*

Picture 10: Remote control, "+" and "–" buttons

Using the "+" and "–" buttons, you can intervene directly in the ride characteristics of the drive system while on the move.

1. Selecting the assistance level:
Using the "+"/"–" buttons, you can choose from five positive assistance levels and two recuperation levels. If assistance level 0 is selected, the motor no longer provides any assistance. Clicking the "+" button increases the level, while the "–" button decreases it. The higher the assistance level is (maximum 5), the more powerful the assistance of the motor will be up to a speed of 25 km/h. Conversely, the recuperative effect of the motor (recovered energy being fed back to the battery and motor brake) is at its most powerful in the lowest available level (-2).

2. Pushing aid:
Pressing and holding the "+" button activates the pushing or starting aid of the GO SwissDrive motor system. This causes the motor to operate in the absence of any pedalling input and is intended to make it easier for you to push the cycle on steep ramps or if the cycle is carrying a heavy payload. A gentle push of the cycle by hand is necessary until the pushing aid kicks in. As

soon as you release the button, the assistance will stop.

3: Reverse gear:
On HP VELOTECHNIK trikes, the system supports reverse riding: Pressing and holding the "-" button activates reverse gear. To initiate a reverse manoeuvre, briefly push forwards on the pedals first and then start pedalling backwards.

Note: These functions are available only up to the speed limit defined in the system (forwards on e-bike/pedelec: 6 km/h, forwards on s-pedelec: 20 km/h, reverse: 3 km/h).

Use of the pushing aid is restricted by law to the 0-6 km/h range in the case of pedelecs/e-bikes or 0-20 km/h for s-pedelecs. Your well-equipped specialist dealer will be able to adapt the speed within this range for you using the GO SWISSDRIVE Servicetool.

4. Function in the stationary menus:
In the configuration menu, you can navigate between the individual selectable items using the "+" and "–" buttons. Clicking the "–" button takes you to the next line. If there is more than one selectable option in the same line, you can navigate from left to right along the line by clicking the "–" button. Similarly, you can navigate to the previous line by clicking the "+" button. If there is more than one selectable option in the same line, you can navigate from right to left along the line by clicking the "+" button.

5. Entering numerical values:
For specific parameters, such as tyre circumference, it is necessary to enter values as numbers. This can be done using the "+" and "–" buttons, starting from a defined initial value. Clicking the "+" button increases the value by +1, clicking the "–" button decreases the value by -1.

Browse button:

Picture 11: Remote control, browse button

The browse button enables you to switch between the individual Evo menus. The menu sequence is fixed and cannot be changed. However, it is possible to deactivate individual menus in the setup options as necessary. Deactivated menus are skipped when you are browsing through them. Pressing and holding the browse button in any menu takes you back to the main menu.

Menu structure of the EVO control device

The menu structure of your Evo display consists of various menus, access to which may be restricted depending on the riding situation. On the move, menu availability is limited to the main menu, trip data and stopwatch in the interests of clarity and simplicity. When stationary, other menus are enabled so that you can, for example, change settings or connect a mobile phone via Bluetooth.

Menus while riding

In ride mode, the display of your Evo control device is divided into five areas: Status bar, assistance level, speedometer, menu position, and a customisable area of the screen that can display a range of useful information relating to the current ride.

The status bar provides you with a quick and clear overview of the current system status in the form of various symbols. You will find a

detailed description of the individual elements in the next chapter.

The currently selected assistance level is shown by the graphic running down the left edge of the display. Using the "+"/"-" buttons, you can choose from five positive assistance levels and two recuperation levels. If assistance level 0 is selected, the motor no longer provides any assistance. Clicking the "+" button increases the level, while the "–" button decreases it. The higher the assistance level is (maximum 5), the more powerful the assistance of the motor will be up to a speed of 25 km/h (s-pedelec 45 km/h). Conversely, the recuperative effect of the motor (recovered energy being fed back to the battery and motor brake) is at its most powerful in the lowest available level (-2).

Picture 12: Main screen

The current speed of the vehicle is displayed digitally to one decimal place. It is possible to toggle displayed units between kilometres per hour (km/h) and miles per hour (mph).

Note: Correct setup of your vehicle's tyre circumference is crucial for a correct speed display. You can adapt the tyre circumference in the setup options (please refer to setup section).

The menu item uses a symbol to tell you which screen is currently selected.

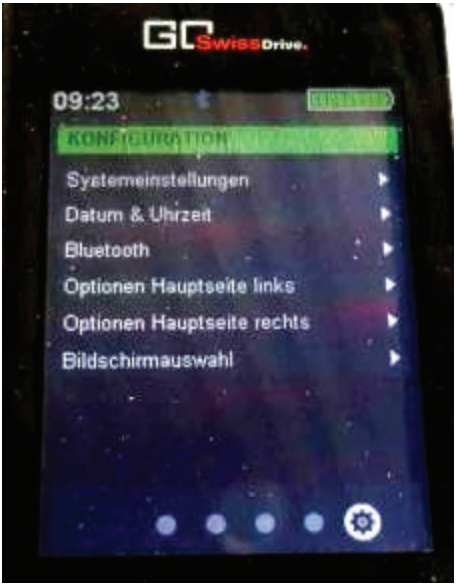
In the customisable screen area, you can choose to have the main menu, an overview of current trip data or a stopwatch function displayed while you are riding. You can toggle through these menus by clicking the browse button.

For a detailed description of these menus and the functions that they contain, please refer to page 15 onwards in chapters "Main menu", "Trip data overview" and "Stopwatch".

Menus while stationary

When the vehicle is stationary, additional menus are made available: Overview of overall data, telephone menu, service menu, a menu for saving data to external devices, and the configuration screens.

Notes for the user



Picture 13: Configuration screen

In stationary mode, the display of your Evo control device is divided into three areas: the status bar as described in the previous section, the menu position and a customisation menu area. You can toggle through these menus by clicking the browse button. You will find a detailed description of the individual menus on pages 17 to 23.

Note: In the interests of road safety, your Evo control device blocks access to these stationary menus while the vehicle is in motion. If one of these stationary menus is active at the time you set off, your Evo will automatically revert to the main menu.

Status bar

The status bar is shown at the top edge of the display in all menus and provides you with a quick and clear overview of the current system status in the form of various symbols. The meanings of individual symbols are described below. Format of following section: Symbol picture on left, text on right

Time:

The current time is shown near the left edge of the status bar. In the setup options, it is possible to choose between 12h and 24h mode. In 12h mode, "AM" or "PM" automatically appears after the time.

USB:

Your Evo control device features a USB interface integrated in the docking station. Whenever the Evo is connected to a mobile phone through this interface, this is indicated by the USB symbol.

Bluetooth:

Your Evo control device has an integrated Bluetooth chip and can connect to compatible devices, such as mobile phones, via Bluetooth 4.0. To find out whether your mobile phone supports the Bluetooth 4.0 standard, please consult the user guide for your mobile phone. The current status of the connection is shown by the Bluetooth symbol. A blue symbol means that the Evo Bluetooth interface is active. If the Bluetooth symbol is not displayed in the status bar, the Bluetooth interface of the Evo is not active.

Telephone:

Note: To be able to establish a Bluetooth connection with a mobile phone, the GO SwissDrive app must be installed on this phone.

Once your Evo is connected to a mobile phone by Bluetooth, this is shown by the telephone symbol in the status bar. Whenever a call or SMS is received by the connected mobile phone, a notification will be shown on the display. A pop-up will appear briefly first (please refer to pop-ups section). Then a list

symbol will be shown in the status bar. This will continue to be displayed until you access the telephone menu of your Evo (please refer to Chapter 10).

Servicetool:

Your well-equipped specialist dealer should have the GO SWISSDRIVE Servicetool, which can be used to reconfigure various settings on your vehicle. Whenever the display is connected to the Servicetool via the USB or Bluetooth interface, this is shown by the Servicetool symbol.

Fault:

If a fault occurs in the drive system of your vehicle, a notification will appear on the display. A pop-up will appear briefly first (please refer to Chapter 14). Then the fault symbol will be shown in the status bar. More detailed information on the current fault and any action that may be required is described in the service menu (please refer to Chapter 12). The fault symbol is cleared when you access the service menu or if the fault is no longer present.

Temperature warning:

As an early safeguard against potential faults in the system, advance warnings may appear on the display. In particular, these include the motor and battery overheating warning. Before the motor or battery overheats and in order to protect the system, power is reduced and the display informs you accordingly. A pop-up will appear briefly first (please refer to pop-ups section). Then, if the operating temperatures of the motor and battery remain above the warning threshold, the temperature warning symbol will be displayed in the status bar in the form of a thermometer. Once the temperature of the motor/battery has fallen below the warning limit following a change in your riding style, the symbol in the status bar will disappear.

Note: Adapt your riding style and/or assistance levels as instructed if you wish to avoid a temporary power reduction or total loss of assistance. You can do this either by lowering the assistance level or by shifting down into a gear with a lower gear ratio in order to reduce the temporary overloading of drive components.

Battery charge state:

The symbol near the right edge of the status bar indicates the current charge state of the battery. The symbol is segmented into 9 bars, with each bar representing 10% of battery capacity. The table below provides a detailed description of how the display changes with state of charge

Display of battery charge state:

9 bars:	100% – 90%
8 bars:	89% – 80%
7 bars:	79% – 70%
6 bars:	69% – 60%
5 bars:	59% – 50%
4 bars:	49% – 40%
3 bars:	39% – 30%
2 bars:	29% – 20%
1 bar:	19% – 10%
0 bar:	9% – 0%

A white bar indicates that the motor is operating in recuperation mode.

Note: The charge state indicator is always relative to the maximum capacity of the battery at the current time. It should be noted that the maximum charge capacity of a rechargeable battery could diminish as the number of charge cycles increases.

Main menu

The main menu contains all the essential information needed during a ride. By default,

this menu is displayed first whenever the system is switched on. Picture: Main screen

In addition to the assistance level and current speed, both of which are permanently displayed in all in-ride menus, here you will see data on the current power output of the GO SwissDrive motor system and the available range remaining.

The current power output is displayed as a three-digit number and is expressed in watts. A negative power value indicates that the motor is operating in recuperation mode. The current power output is also represented by an analogue circular instrument.

Note: Please bear in mind that the current power output displayed is based on battery data. Depending on the model used, there might be a small delay between the moment at which the actual output is generated and the time the value reaches the screen.

The range is displayed as a three-digit number and is expressed in km. The range is also represented by an analogue circular instrument. The algorithm for calculating the range takes into consideration the total distance covered by the cycle (overall data) as well as the last few kilometres travelled. The way in which the algorithm adapts to your riding style therefore improves with increasing total distance, enabling ever greater accuracy of range predictions.

Note: Please bear in mind that the range displayed is merely an algorithm-based prediction. Due to the route profile, the selected assistance level and many other factors, the displayed value may not always reflect the actual range.

The lower part of the main menu can be configured to show any two parameters of your choice from the current trip data. You can choose from distance travelled, ride time, average consumption, average speed and maximum speed. Configurations are made in the setup options. For more detailed information, please refer to page 20 onwards in "Configuration and setup options"

Trip data overview

The second in-ride menu offers a compact overview of information relating to the current trip.

Here you will find data on distance travelled so far, ride duration, consumption, average speed and maximum speed. The starting point for a trip is freely definable. Your Evo offers three different ways of doing this: When the trip menu is displayed, you can reset the trip data at any time by clicking the confirm button on the remote control and begin a new trip.

Picture 14: Trip screen

In the setup options, you can also clear the trip data manually or specify that the trip data should be reset automatically after each stop lasting longer than four hours so that a new trip begins the next time the display is

switched on. For more detailed information, please refer to page 20 onwards in "Configuration and setup options".

Note: Correct setup of your vehicle's tyre circumference is crucial for a correct trip data display. You can adapt the tyre circumference in the setup options (please refer to setup section).

Stopwatch

Using the stopwatch function of your Evo, you can time how long it takes to travel a certain distance. Each measurement records both time and distance travelled, expressed in kilometres.

Picture 15: Stopwatch

While the stopwatch menu is displayed, click the confirm button on the remote control once to start the stopwatch. Clicking the confirm button again stops the timer. Pressing and holding down the confirm button saves the recorded time and the stopwatch is reset. However, if you want to resume timing after a break, simply briefly press the confirm button again.

Note: Please bear in mind that only the last two recorded times will be saved. Whenever a new time is saved, the oldest recorded time will be deleted.

Note: Correct setup of your vehicle's tyre circumference is crucial for correct measurement of distance travelled. You can adapt the tyre circumference in the setup options (please refer to setup section).

Overall data overview

Picture 16: Overall data screen

When the vehicle is stationary, additional menus are enabled so that you can find useful information and reconfigure settings. The first of these menus provides a compact overview of your vehicle's performance history.

Notes for the user

The menu is set out in a similar way to the trip menu; here you will find data on the total distance travelled, total ride time, overall consumption, average speed and maximum speed. Unlike the trip data, the overall data cannot be modified or reset.

Note: Correct setup of your vehicle's tyre circumference is crucial for a correct overall data display. You can adapt the tyre circumference in the setup options (please refer to setup section).

Telephone menu

Picture 17: Telephone connected pop-up

Your Evo enables you to connect a mobile phone via Bluetooth 4.0. You will find instructions on how to connect a mobile phone on page 20 onwards in "Configuration and setup options".

To find out whether your mobile phone supports the Bluetooth 4.0 standard, please consult the user guide for your mobile phone.

Picture 18:Call pop-up

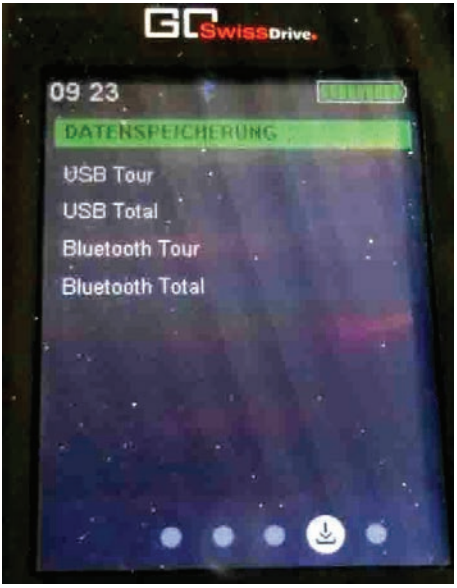
Once your Evo is connected to a mobile phone, incoming phone calls and SMS will be shown on the display. A pop-up will appear briefly first (please refer to pop-ups section). Then a list icon will be shown in the status bar, notifying you that a new call/SMS has been registered in the telephone menu. Calls/SMS are sorted in the list by time and date, with the most recent calls/SMS displayed at the top. If the number of the incoming call/SMS is stored in the contacts list of your mobile phone, the name of the caller/sender stored on your phone will be displayed in the list in place of the telephone number.

You can clear the list of received calls and SMS by navigating to the clear list on-screen button using the "+" and "–" buttons on the remote control and then pressing the confirm button. Please note that only the list stored in your Evo will be cleared. The information in your mobile phone will remain unchanged and is unaffected by this action.

Notes for the user

Note: The telephone menu on your Evo simply allows you to view the data on your mobile phone. The Evo cannot be used to answer or make calls. In the interests of road safety, you should always stop before you use your mobile phone.

"Datenspeicherung" [Data storage]



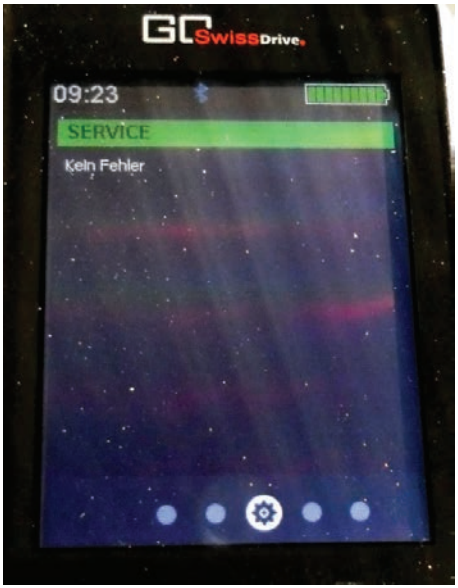
Picture 19: Data storage screen

Your Evo enables you to save your current trip data and overall data to an external device via the USB or Bluetooth interface.

Once an external device has been connected to your Evo via either of these interfaces, you can select one of the four save options in the "Datenspeicherung" [Data storage] menu by navigating to the desired item using the "+" and "–" buttons on the remote control. The saving process starts when you then click the confirm button on the remote control. The item currently selected is highlighted in green. A display pop-up confirms that the data were saved to the external device successfully.

Service menu

If a fault occurs in the drive system of your vehicle, the Service menu provides succinct instructions on how to rectify it.



Picture 20: Service screen

The list presents the most recent faults which have occurred. Each fault ID consists of a letter and a two-digit number. The letter identifies which component is affected by the fault.

- M: Motor fault

- D: Display fault

- B: Battery fault

- K: Communication fault

A communication fault means that the communication between individual system components has been disrupted. Even if the components themselves appear to be working normally, the system enters fault mode in the interests of safety. The cause of most communication problems can often be

identified by checking the cabling and physical connections.

To assist with fault correction, possible remedial measures are provided in the form of a brief guide. If the fault cannot be rectified despite these measures, you should have the vehicle inspected by a specialist dealer.

You can clear the list of past faults by navigating to the "Liste löschen" [Clear list] on-screen button using the "+" and "–" buttons on the remote control and then pressing the confirm button.

Underneath the fault list, the Service menu when your vehicle is due for its next service at your specialist dealer displays in the form of a date or predicted kilometre reading.

Note: The availability of the service interval indicator depends on the manufacturer of your vehicle. If this function is not enabled, no information will be displayed here

Configuration and setup options

In the "Konfiguration" [Configuration] menu, you can make changes to various default settings and also personalise your Evo to suit you.

Picture 21: Configuration screen

The "Konfiguration" [Configuration] menu is divided into 6 submenus. To open a submenu, navigate to the desired item using the "+" and "–" buttons on the remote control and then press the confirm button. The item currently selected is highlighted in green. To go back to the main menu from a submenu, navigate to the "Konfiguration" [Configuration] item at the top of the submenu – this will then be highlighted in green – and then press the confirm button on the remote control.

Within the submenu, you can go from one item to another using the "+" and "–" buttons on the remote control. The item currently selected is highlighted in green. Where alternative options are available for a particular setting, the option currently active appears against a grey background and is marked with a tick. To activate a different option, navigate to the desired option using the "+" and "–" buttons on the remote control and then press the confirm button on the remote control.

Notes for the user

To change a setting in the form of a numerical value, e.g. tyre circumference, navigate to the desired item using the "+" and "–" buttons on the remote control and then press the confirm button on the remote control. You can now increase or decrease the value by clicking the "+" and "–" buttons on the remote control. Each click of the "+" button increases the respective parameter by +1, each click of the "–" button decreases the parameter by -1. Pressing and holding the "+" and "–" buttons activates rapid advance mode, which remains active until the button is released. Once you are at the desired value, you can save it by clicking the confirm button on the remote control.

A detailed description of the individual submenus is provided in the chapters that follow.

"Systemeinstellungen" [System settings]

In the "Systemeinstellungen" [System settings] submenu, you can change various default settings in your system.

You can choose to have distances and speeds displayed in metric or imperial units. In the metric system, distances are expressed in kilometres, and speeds in kilometres per hour; in the imperial system, distances are expressed in miles, and speeds in miles per hour.

You Evo display offers various menu languages to choose from. The selectable options depend on the configuration implemented by your vehicle's manufacturer. German and English are available as standard.

With the parameter *Aus nach Min* [Off after mins], you can specify how many minutes should be allowed to elapse with no user input or vehicle motion before the system switches off automatically in order to save energy. The time that you set should not be too short, otherwise the system could switch off unexpectedly during an unusually long wait at a red light, for example. If the system does switch off before you want it to, you can reactivate it at any time simply by pressing the On/Off button on the remote control.

With the parameter *Radumfang* [Wheel circumference], you can enter the circumference of your vehicle's tyres. The value entered is expressed in millimetres. Please bear in mind that the wheel circumference is the basis for many of your Evo system's calculations, such as displayed speed, distance travelled and remaining range. If possible, have this setting configured by your specialist dealer when you collect your vehicle.

If you activate the option *Tour nach 4h löschen* [Delete trip after 4h], your trip data will be deleted after any stop lasting longer than four hours and data recording will restart from zero the next time the display is switched on.

Furthermore, you can reset trip data manually at any time from this menu by selecting the item *Tour löschen* [Delete trip].

Note: The Evo display features an integrated brightness sensor. This adapts the backlighting of the display to the brightness of ambient light.

"Datum und Uhrzeit" [Time and date]

In the *Datum und Uhrzeit* [Time and date] submenu, you can set the current time and date. Picture: "Datum und Uhrzeit" [Time and date]

It is also possible to choose between 12h and 24h mode for the time format. In 12h mode, "AM" or "PM" automatically appears after the time in the status bar.

Bluetooth

Your Evo control device has an integrated Bluetooth chip and can connect to compatible devices, such as mobile phones, via Bluetooth

4.0. To find out whether your mobile phone supports the Bluetooth 4.0 standard, please consult the user guide for your mobile phone. Picture: Bluetooth

To connect a compatible mobile phone, you need to activate the Bluetooth interface of this mobile phone first. For details, please refer to the user guide for your mobile phone. Next, activate the Bluetooth interface of your Evo control device by navigating to the Bluetooth item in the Bluetooth submenu and pressing the confirm button on the remote control. Then navigate to the Smartphone item and press the confirm button on the remote control. Both items should now be marked with a tick. Your Evo control device now attempts to establish a connection with a nearby mobile phone.

To authorise the connection on the mobile phone, open the GO SwissDrive app, select your Evo control device and confirm the request to establish a Bluetooth connection.

Note: To be able to establish a Bluetooth connection with a mobile phone, the GO SwissDrive app must be installed on this phone.

The GO SwissDrive app can be downloaded from the Apple App Store (iOS devices) or Google Play Store (Android devices)

Main menu options

Your Evo enables you to have the lower part of the main menu show any two parameters of your choice from the current trip data.

You can choose from distance travelled, ride time, average consumption, average speed and maximum speed. The parameter currently active appears against a grey background and is marked with a tick. To activate a different parameter, navigate to the desired option using the "+" and "–" buttons on the remote control and then press the confirm button on the remote control. If you would like to deactivate the currently active parameter without selecting a new one, navigate to the active parameter using the "+" and "–" buttons on the remote control and then press the confirm button on the remote control. From now on, no parameter will be shown at the corresponding position in the main menu.

Screen selection

To give you even greater control over what you see on your customisable display, your Evo enables you to deactivate individual menus completely. These screens will no longer be displayed when you are browsing through the menu structure.

In this way, you can personalise the amount of information shown to suit your own requirements. The menus currently active appear against a grey background and are marked with a tick. If you ever want to change the status of a menu, navigate to the desired menu using the "+" and "–" buttons on the remote control and then press the confirm button on the remote control.

Note: Please bear in mind that it is not possible to deactivate the main menu or the configuration menu.

Pop-ups and warnings

Your Evo uses pop-ups to inform you of specific events and operating states. A pop-up appears for a period of three seconds before disappearing automatically. The meanings of individual pop-ups are described below.

Bluetooth:

Your Evo control device has an integrated Bluetooth chip and can connect to various compatible devices, such as mobile phones, via Bluetooth 4.0. Once a new Bluetooth connection has been established, you will be informed by a pop-up to this effect.

Notes for the user

To find out whether your mobile phone supports the Bluetooth 4.0 standard, please consult the user guide for your mobile phone. For details on how to establish a connection, please refer to "Configuration and setup options" from page 20 onwards.

Incoming telephone calls:

With your control device connected to a mobile phone by Bluetooth, notification of incoming phone calls on this phone will appear as a pop-up on the Evo display. If the number of the caller is stored in the contacts list on this mobile phone, the pop-up will show the contact details (surname, first name) assigned to this number. If the telephone number is not stored in the contacts list, only the number will be displayed.

Incoming SMS:

With your control device connected to a mobile phone by Bluetooth, notification of incoming SMS on this phone will appear as a pop-up on the Evo display. If the number of the sender is stored in the contacts list on this mobile phone, the pop-up will show the contact details (surname, first name) assigned to this number. If the telephone number is not stored in the contacts list, only the number will be displayed.

Battery charge state information:

Whenever the battery charge of your GO SwissDrive motor system falls below 20%, you will be informed by a pop-up to this effect. Another message in the form of a pop-up will appear if the charge state of the battery drops below 10%.

Data storage:

Your Evo control device enables you to save your current trip data and overall data to an external device via the USB or Bluetooth interface. A display pop-up confirms that the data were saved to the external device successfully. Where relatively high data volumes are being saved, separate pop-ups will appear to mark the start and successful completion of the saving process. If an error occurs during the saving process, notification will be given again in the form of a pop-up.

No external device connected:

If you try to save data via the USB or Bluetooth interface without an external device connected to this interface, a notification to this effect will be displayed in the form of a pop-up.

Advance warnings:

As an early safeguard against possible overloading of your GO SwissDrive motor system, advance warnings may be issued by your Evo control device. In particular, these include the motor and battery overheating warning. Before the motor or battery overheats and in order to protect the system, power is reduced and the display informs you accordingly.

Note: Adapt your riding style and/or assistance levels as instructed if you wish to avoid a temporary power reduction or total loss of assistance. You can do this either by lowering the assistance level or by shifting down into a gear with a lower gear ratio in order to reduce the temporary overloading of drive components.

Charging a mobile phone via USB connection

The docking station of your Evo control device has a USB interface. The USB interface can be used not only to transfer data but also to charge a mobile phone. To do this, connect the mobile phone to the USB interface of the docking station using a compatible USB cable.

Notes for the user

Charging begins as soon as the connection is established.

Note: Please bear in mind that mobile phone charging cannot take place unless your GO SWISSDRIVE motor system is switched on. The maximum charging current is 1.1 A. The maximum charging voltage is 5.5 V.

Note: The availability of the charging function depends on whether it is supported by your vehicle. For safety, some wiring harnesses may have built-in fuse protection, which can significantly restrict the available charging current.

General notes on system handling

Treat your Evo control device with the necessary care. The housing is made from plastic and it contains sensitive electronic components. Do not attempt to reshape or drill through it, avoid exposure to naked flames and liquids and be careful not to drop it.

In the event that it is damaged, refrain from further use of your Evo control device, as unforeseeable defects could develop.

Do not remove or fit the display in areas with a potentially explosive atmosphere (e.g. fuel stations).

The display of your Evo control device is rated IP 65 for dust and splash water protection. Nevertheless, you should remove the display from the holder and store it in a safe place before transporting your e-bike or s-pedelec by car or trailer as the air flow in this situation could cause significant pressure differences, which could allow the ingress of dust and water into the housing.

Refrain from placing the display on the docking station if the contact surfaces are damp or dirty. Otherwise, malfunctions could occur during the ride.

Do not carry the display together with sharp-edged items (keys, pocket tools)

Avoid exposing the display to high temperatures, e.g. keep it away from sources of heat and do not leave it next to car windows in conditions of strong sunlight.

Make sure that no moisture enters through the USB opening in the holder. The USB port should be kept sealed with the cap when it is not being used.

Care and maintenance of the Evo control device

Notes on care

Clean your Evo control device immediately if comes into contact with any substances that could lead to staining (e.g. thinner, petrol, ink, makeup, etc.). Use a soft, lint-free cloth for cleaning.

Do not use alcohol-based cleaning agents, chemical cleaning products or abrasive materials as these could damage the display.

Do not use pressure jets or compressed air for cleaning.

Note: Keep the USB cap sealed at all times during cleaning

Notes on maintenance

Your Evo control device is generally maintenance-free with the exception of the replaceable internal battery. To have the battery exchanged, you should take your Evo display to an authorised specialist dealer.

Never attempt to repair your Evo control device yourself. Opening the display, docking station or remote control will void all warranties, whether express or implied. In the event that maintenance work is required, this

Notes for the user

should be carried out only by an authorised specialist dealer.

Any changes or modifications to this device could affect its electromagnetic compatibility (EMC) and lead to undesirable consequences.

Technical data

Table 1 presents a summary of the most important technical data relating to your Evo control device.

Care of system components

As the central component of your GO SwissDrive propulsion system, the motor is maintenance-free. For this reason, absolutely no maintenance work is necessary on your part.

The other components of your GO SwissDrive system are generally low-maintenance, aside from the need for regular recharging of the battery. However, you should take care to keep it clean at all times.

In the event that your pedelec/e-bike or s-pedelec does require maintenance, you should have this work carried out only by a GO SwissDrive authorised specialist dealer.

The necessary steps for cleaning and caring for your pedelec/e-bike or s-pedelec, including the removal of components, are described below.

To carry out maintenance work on the system, always disconnect the battery first by removing the magnetic connector.

Never clean the battery using damp or even wet substances or materials. Take care to ensure that the contacts never become wet or dirty.

To clean the battery and other parts of the system, it is preferable to use a slightly moist cloth. Avoid exposing contacts and connectors to water.

Attention! Never use a high-pressure cleaner or water hose to clean a pedelec/e-bike or s-pedelec equipped with the GO SwissDrive motor system. To clean the system, use only a moist cloth or sponge, but never use wet substances or materials.

Attention! Opening the motor or parts of the motor will void all warranties, whether express or implied.

Table 1: Technical data of the EVO control device

Parameter	Symbol	Min.	Typ. value	Max.	Unit
Temperature range in	T_{stg}	-30		+80	°C
Temperature range in	T_{op}	-10	25	+60	°C
Temperature range during	T_{ch}	-10	25	+40	°C
Voltage range during USB	U	4.5	5.0	5.5 V	V
Amperage range during	I			1.1	A
Supply voltage	U_{in}	24	36	70	V
Weight	W_h		approx. 92		g
Index of protection			IP 65		

Notes for the user

 **Attention!** Never remove the type label from the motor or battery. This is used to identify these system components and to declare legal conformity in accordance with the relevant sections of DIN EN 15194 (pedelec/e-bike).

 **Attention!** In the case of the s-pedelec, the serial numbers are recorded in the type approval. This is valid only when the numbers match. Wilful removal of the label will void all warranties and, in the case of the s-pedelec, it will lead to invalidation of the type approval required for vehicle operation

 **Danger!** Have your pedelec/e-bike or s-pedelec routinely serviced by an authorised specialist dealer at the intervals stated in the general instruction manual for the vehicle concerned.

Servicing system components

Removing the rear wheel

In the event of a flat tyre or to service gearshift components, it may be necessary to remove the rear wheel.

 **Danger!** Before you remove a rear wheel, please read the relevant sections of the general instruction manual for your vehicle. If you are not absolutely sure or if you have any questions, please consult your specialist cycle dealer.

As the rear wheel contains the drive for your GO SwissDrive system, please observe the following procedure:

1. Switch the system off at the control device and disconnect the battery.

2. After battery disconnection, switch the display on again with the rear wheel stationary in order to de-energise the system completely.

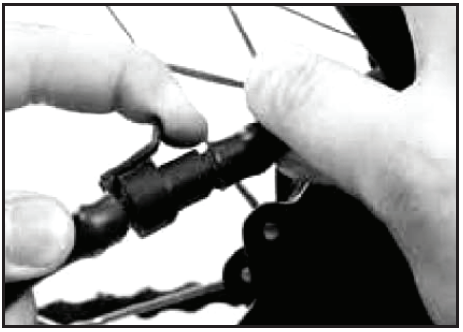
3. Position the pedelec/e-bike or s-pedelec in such a way that the rear wheel can be removed. Ideally, clamp it in a compatible workstand. Given the heavy weight of your pedelec/e-bike, it is advisable to enlist the help of a second person.

4. Using the gearshifter, shift the chain to the smallest sprocket on the rear wheel (highest gear) as this will make it easier to remove and fit the wheel.

Note: With mechanical rim brakes (cantilever and linear-pull brakes), you need to detach the control cable from the brake arm first. With disc brakes (hydraulic or mechanical), you should first look to see where the brake pads or wear indicators (metal lugs/tabs) are sitting. You will then be able to tell whether the pads are still located in their designated position after removal. Please read the instruction manual issued by the brake manufacturer.

5. Disconnect the motor connector from the wiring harness. To do this, release the safety catch and pull the connector apart. Where present, also loosen cable ties securing the motor cable.

Notes for the user



Picture 22: Disconnecting the motor connector

5. Loosen the M10 axle nuts using a 17 mm ring/open-ended spanner.

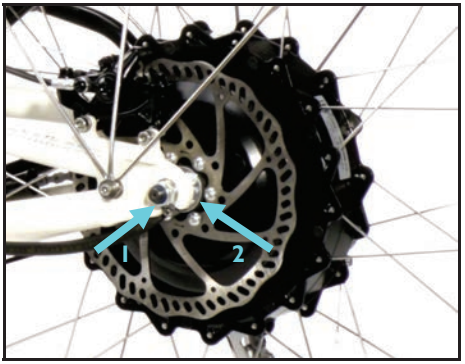
6. Note the presence of the torque arm on the left-hand side. It is essential that this be refitted when the wheel is being refitted.

Danger! When both nuts are being loosened, the rear wheel could fall out. Secure the rear wheel in the frame using one hand or, given its heavy weight, enlist the help of a second person.

To make it easier to remove the rear wheel, pull the derailleur back slightly by hand. Lift the pedelec/e-bike or s-pedelec up a little and give the wheel a thump so that it drops down and out.

7. You have removed your rear wheel including the motor.

Attention! If you completely removed the nuts from the axle, the torque arm could fall off. Set this to one side along with the nuts and washers arranged in the order of removal somewhere clean for safekeeping.



Picture 23: Axle bolt (1), torque arm (2)

Fitting the rear wheel

1. If the torque arm is not seated on the motor axle, fit this to the designated anti-twist part of the motor axle.

2. Shift into the highest gear so that the derailleur is positioned as far out as possible. You can now insert the rear wheel into the dropouts of your pedelec/e-bike or s-pedelec.

Make sure that the cable exit of the motor is located behind the axle when fitted and that the torque arm is turned to a position in which it can be secured to the frame.

You can now fit the bolt to locate the torque arm and tighten the nut slightly. The correct sequence of parts must be observed.

3. Now tighten the M10 axle nuts uniformly. Note the washers fitted between the frame and respective axle nuts. These must bear flat.

Danger! The axle nuts must be tightened to a torque of 45 Nm with the use of a torque wrench.

Notes for the user

Attention! Use only self-locking M10x1 nuts. Genuine replacement nuts can be obtained from your well-equipped specialist dealer for GO SwissDrive replacement parts.

4. Where rim brakes are fitted, re-attach the brake cable immediately after the wheel has been fitted. Where hydraulic rim brakes are fitted, re-attach the brake body immediately and close the quick-release clamp.

Make sure that the brake body touches neither the rim nor the tyre when the wheel turns.

Danger! Where a disc brake is fitted, pull the brake lever until you feel a solid bite point. The brake lever must not pull in all the way to the handlebars.

You will find further information in the general instruction manual for your vehicle.

5. Look at the display of the control device to check that the system is switched off. Only if this is the case should you connect the motor to the wiring harness. To do this, plug the motor connector into its counterpart on the wiring harness.

Note: Note the presence of the reverse polarity protection (geometric alignment) on the connector. Mate the connectors slowly and very carefully, do not use force under any circumstances.

Note: Note the presence of the seal on the connector. When the connection has been established, this must be precisely seated in the designated socket if leak-tightness is to be ensured.

6. Finally, secure the cable to the frame using a cable tie so that it does not protrude out to the side, has no possibility of getting caught in the spokes and does not scrape on the motor.

Handle the connector carefully so that it does not become damaged and lose its leak-tightness.

Danger! For assembly work, always use a torque wrench and observe the specified torques. **The clamp bolts of the rear wheel must be tightened to 40 Nm.**

Battery and charging

Important safety information

Attention!

Please read through these instructions carefully before you use this rechargeable battery. Disregard for any safety information and instructions could lead to product damage, electric shock, fire and/or serious injuries.

The manufacturer accepts no liability for defects arising from failure to comply with these instructions.

All product information must be kept for future information and reference.

Use the battery exclusively for your pedelec.

Keep batteries clean and dry.

To avoid contamination of the charging socket and contacts, e.g. by sand or mud, do not put them down anywhere but on a clean surface. Keep them dry.

If the battery contacts become dirty, clean them using a clean and dry cloth.

It is recommended that batteries be removed from devices whenever they are not in use.

Disposal of batteries with normal household waste is not permitted. Battery disposal is regulated by national legislation in the country concerned.

Hazard warnings:

Batteries must not be dismantled, opened or crushed. Improper opening or wilful destruction of the battery presents a risk of serious injury. Opening the battery will lead to voiding of the warranty.

Batteries must not be exposed to heat sources (e.g. radiators) or fire. The effects of external heat could cause batteries to explode. While charging, always ensure adequate air circulation. High temperatures also reduce battery life.

The battery contains chemical substances that could cause hazardous reactions if the safety information provided here is disregarded.

Avoid contact with any fluid escaping from a damaged battery. In case of contact, wash the fluid away with water. In case of contact with the eyes or if swallowed, also seek medical advice.

Battery and charging

Hazard warnings:

Batteries must not be short-circuited. Batteries must not be stored in such a way that presents a hazardous situation, such as in a packet or drawer where they could short-circuit each other or be short-circuited by other conductive materials.

Batteries must not be subjected to mechanical impacts.

Never submerge the battery in water.

Batteries that are not designed for use with the pedelec must not be used.

Keep batteries away from children.

Refrain from further use of batteries and chargers if damaged (connector, housing, cable).

Do not use chargers other than those specifically intended for use with the downtube battery. Use of any other charger could lead to malfunctions, reduced service life or fire and explosions.

Avoid any contact with or ingestion of fluid. In the event of leaking vapours, ensure a good supply of fresh air. Leaking fluid or vapours could lead to skin irritation. In case of accidental contact, the fluid should be rinsed away with plenty of water. Seek medical attention in case of serious irritation, ingestion of fluid, irritation of airways or contact with eyes.

Battery use

First use/commissioning

Note: With new rechargeable batteries, there is a possibility that not all LEDs will light up during the initial charge cycles. The lithium ion cells do not reach their full capacity until after the first few charge and discharge cycles. In addition, the management system (inside the battery housing) needs to calibrate itself first, which takes place automatically during the first charge and discharge cycles.

On purchasing a new battery and after a relatively long period out of use, the battery will be in transport mode and no longer active.

Press the pushbutton on the charge state indicator of the battery. The LEDs light up one by one until all LEDs are lit for a short time. This indicates that the battery has been in transport mode (deep-sleep mode).

Picture 24: Charge state indicator and control on the battery

When the pushbutton is pressed again, one to four LEDs light up, depending on the battery charge level.

If the battery does not wake up, the cell voltage might be too low. In this case, connect the charger and press the LED pushbutton. The battery will then be charged for one minute.

Battery and charging

Before first use, fully charge the battery until all LEDs light up when you activate the LED indicator or until the charger signals the end of the charging process.

Deep-sleep mode activation

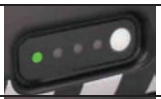
If the battery remains out of use for eight days, it automatically goes into deep-sleep mode. The battery also enters deep-sleep mode when its voltage falls below the undervoltage threshold. In addition, it is possible to activate deep-sleep mode manually. This is done by pressing and holding the LED pushbutton for eight seconds. Release the pushbutton as soon as the second LED lights up.

With the battery in this state, the only way to wake the battery is to press the control button (see Picture 1).

Battery charge state indicator

You can check the state of charge of the battery directly on its display by briefly pressing the white pushbutton on the right.

The current charge state is indicated by the number of LEDs that light up.

Display	State of charge
	0 – 25
	26 – 50%
	51 – 75%
	76 – 100%

Charging the battery

Safety information

Attention! The charger must not be used for any purpose other than charging the battery supplied. No other use is permitted. Tampering of any kind with the charger or battery housing is prohibited.

The charger is intended for indoor use only. Only charge the battery in a dry environment in which there is no risk of fire. Always avoid the ingress of water and moisture into the charger. If water ingress nevertheless does occur, immediately disconnect the charger from the mains and have it inspected by a specialist dealer.

Attention! The mains voltage must be the same as the voltage stated on the charger's type plate. The supply voltage of the charger is stated on the type plate on the back of the device.

In the event of a sudden change in temperature from cold to hot, condensation could form on the charger. In this situation, wait until the charger has warmed up to room temperature before you connect it to the mains. The best way to avoid this situation is to store the charger in the same place as it is used.

Charge the battery only at an ambient temperature of between 0 °C and 45 °C (35 °F – 104 °F). Deep discharge

Danger! If smoke or unusual odours are observed, immediately pull the charger's plug out of the socket and disconnect the battery from the charger.

Battery and charging

Do not charge batteries for long periods when not needed.

A charger with a damaged mains plug or mains cable must not be connected to the mains and must be replaced by a specialist dealer. The same applies to extension cables which are not in good working order.

Do not attempt to modify or dismantle the charger. Have repairs carried out only by qualified professionals.

Danger! Never charge a damaged battery (risk of explosion).

If the battery becomes fully discharged and a long period passes without a recharge, the battery could enter a state of deep sleep. Whenever this happens, the charge state indicator will no longer be active. In these situations, proceed as described in the "First use/commissioning" chapter.

If the battery cannot be woken as described in the "First use/commissioning" chapter, have it tested by a specialist dealer.

General information on battery charging

You can charge the battery directly on the vehicle itself or, if you open the lock and remove it, you can charge it elsewhere, such as in your home or garage. Whether it remains fitted or is removed, you can charge the battery at the same charging socket.

Picture 25: Charging socket

Before first use, be sure to fully charge the battery. To comply with transport laws, the battery is charged to just 30% in the factory. As this charge level will subsequently diminish due to unavoidable self-discharge (approximate value ~0.1% per day at room temperature), the battery will always need to be charged before first use. The battery reaches its maximum capacity after around five cycles (complete charge and discharge).

It is possible to recharge the battery regardless of its current state of charge without this affecting its service life. The battery achieves maximum life if charged at an ambient temperature of between 10 °C and 30 °C.

Connecting and charging

- Wake the battery by pressing the control button.
- Connect the power unit to the mains. The LED on the charger now lights up green.
- With the 5 A charger, it is necessary to switch the charger on separately using a mains switch.
- Connect the charging cable to the battery charging socket. The LED on the charger lights up red for the duration of the charging process.
- Depending on the charge level, the LEDs on the battery will light up and flash (see 2.3.4). At the end of the charging process, all LEDs

Battery and charging

will go out. The charging time varies, depending on the capacity of the battery and the charging current of the charger.

- After charging, it is safe for the battery to remain connected to the charger.
- After the charging process has finished, unplug the mains plug from the socket first and then disconnect the charging cable from the battery.

Removing the battery

Attention! Switch the system off at the control button before you disconnect the system's power cable from the battery. Failure to do this could result in damage to system electronics or the contacts of electrical connections.

To remove the battery, open the lock using the key (1). The barrel now pops out. The battery can be removed. To do this, slide it forwards (2) and then lift it up and out (3).

Refrain from removing the battery during a ride.

Picture 26: Removing the battery from the battery mounting rail

Fitting the battery

Place the battery on the mounting rail and slide it into position. Once the battery has been fitted, press the lock barrel in and check that the battery is now firmly seated. The lock is closed and engaged. Doing this helps to ensure that the battery does not subsequently fall out.

Now insert the magnetic connector of the system into the socket on the battery.

You know that the connector is correctly seated when it is attracted by the magnetic counterpart in the battery.

Before you plug it in, make sure that the contacts of both the connector and the socket on the battery are free of foreign matter, particularly electrically conductive and magnetic parts.

Remove the key as a safeguard against theft and to avoid injuries before using your pedelec/e-bike or s-pedelec. Do not attempt to fit the battery during a ride.

After charging, plug the connector back into the power socket of the battery.

Attention! Connectors and cables must not scrape against tyres, the chain or the ground during a ride. Look in particular for magnetic particles on the connector and remove these before plugging in.

Battery handling and care

Good care combined with proper use and storage at the correct temperatures will have a positive effect on the battery's service life.

Operating temperatures of between 5 and 35 °C are recommended. If the ambient temperature falls below this range, we recommend that you store the pedelec – or at least the battery – in a warmer place. Do not fit the battery until shortly before

Battery and charging

your next ride. You will then have the full power and capacity of your battery at your disposal from the start of the ride.

If the battery is very cold, do not attempt to charge it. Allow the battery to warm up at room temperature until it is warmer than 10 °C.

Do not leave the battery permanently connected to the charger. Over long periods, this could result in damage to the battery or electronics.

Note: If the battery has been fully discharged, you should recharge it immediately. Doing so will prolong the service life of the battery and avoid deep discharge.

Storing the battery or pedelec

If the battery is placed in storage for long periods without a recharge, it could suffer permanent damage. This is particularly the case when the battery is stored at high temperatures and humidity.

Store the battery in a cool and dry place. The ideal temperature range is between +5 and +20 °C for long periods in storage.

If the battery is to remain out of use for a long time or is to be placed in storage for a long period, you should charge it beforehand until the three LEDs of the charge state indicator light up, which corresponds to a capacity of 60% to 80%.

You must check the state of charge of the battery every three months. If the state of charge has dropped (fewer than three LEDs light up), recharge the battery to around 60% to 80% of capacity (three LEDs lit).

Note: A rechargeable battery stored for long periods without a recharge could sustain damage despite the low rate of self-discharge and its maximum capacity could be severely reduced by the effects of deep discharge.

Observe the notes on storing the complete pedelec/e-bike or s-pedelec in the general instruction manual for your vehicle.

Resetting the battery

The battery has a protection circuit for detecting fault states, e.g. a short circuit at the connectors or overheating.

If the fault persists for a long period, the electric circuit will be interrupted completely.

If the battery feels warm, let it cool down fully first.

It is possible to reset and restart the battery by pressing and holding the LED indicator button on the battery for approximately 10 seconds. If the previously detected fault states are no longer present, the battery will be restarted.

Note: After the first few metres into the ride, check that the battery indicator is functioning correctly again. If you continue to encounter problems, please consult your specialist dealer.

If this still does not work, charge the battery at least for a short time to finish the starting process.

If the faults continue to be detected, the electric circuit will remain interrupted. In this case, please consult your specialist dealer.

Battery and charging

Care, storage and transport

Care

To clean the battery housing, use a soft, damp cloth or a neutral cleaning agent. Please do not use cleaning agents such as petrol, alcohol or other liquids. Non-neutral cleaning agents could lead to peeling paint, discolouration, deformation, scratches or defects.

Storage

For optimum battery life, it is advisable to store the battery in the following conditions:

- Temperature: 18-23 °C
- Humidity 0-80%
- Charge level 70%

After around three months of storage, check the charge level and, if necessary, recharge the battery to approximately 70%.

Transport

The battery may be shipped only in the packaging in which it was delivered. This is a special packaging for hazardous goods and bears the necessary warning notices.

Fault analysis

Battery not charging

- Check the connection of the mains cable, check that the socket is supplying power
- Check that the 5 A charger is switched on at the mains switch
- Check the contacts of the charger for impurities and damage
- Check that the charger's connector is firmly plugged into the battery charging socket
- Voltage too low. Charge the battery
- Is the battery damaged or defective?

If charging still does not take place, please have the battery and the charger inspected by your specialist dealer.

Disposal

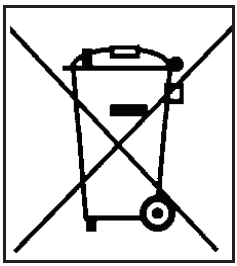
Do not dispose of batteries with the household waste. Hand over the battery to a designated collection point.

It will then be forwarded to an approved disposal facility on your behalf.

If you wish to dispose of the charger, you should take it to a designated recycling facility for waste electrical and electronic equipment.

By complying with disposal regulations, you can help to avoid possible negative impacts on your local environment and on human health. Incorrect disposal could be harmful.

Further information can be obtained from your local council, disposal company or the specialist dealer from which you purchased the equipment.



Installation notes

Fitting an HP Velotechnik pedelec/e-bike retrofit kit

You can retrofit a GO SwissDrive pedelec system to your HP VELOTECHNIK cycle at any time.

Note: The conversion should normally be carried out by a trained bicycle mechanic. Your specialist dealer will be happy to help.

Fitting a brake disc

It is possible to fit a standard 6-hole brake disc to your GO SwissDrive motor. Only use brake discs with a diameter of 180 mm.

Attention! Special T25 screws are required due to the nature of the design. For brake discs that are 2 mm thick, only M5x7 screws complying with ISO standard 7380 may be used.

1. Place the brake disc on the mount of the GO SwissDrive motor in the correct direction of rotation.

2. Fasten all screws by hand through two or three turns.

3. Then tighten all screws a little more by exactly the same amount.

4. Spin the brake disc against the direction of rotation and hold it fast.

5. Finally, tighten the screws in a crosswise pattern using a torque wrench. **The specified torque is 5 Nm.**

Note: Use only genuine GO SWISSDRIVE screws, which can be purchased from your authorised specialist dealer.

Freehub body

Due to the special dimensions of the product, only genuine GO SwissDrive replacement freehub bodies may be used. **Tighten the freehub body to max. 8 Nm**.

Warranty terms

HP VELOTECHNIK offers a 10-year warranty on the cycle frame and frame parts. Please refer to the warranty details described in the instruction manual for your cycle.

In addition to your statutory rights, GO SwissDrive offers a one-year warranty on the components of the drive system. If a defect occurs during this period, please contact the specialist dealer from which you purchased your pedelec/e-bike or s-pedelec. Take proof of purchase and your servicing records with you so that your claim can be dealt with as efficiently as possible.

Table 2: Important tightening torques

Component	Note	Tightening torque
Brake disc screws	T25, M5x7	5 Nm
Axle nuts	M10 x 1, self-locking	45 Nm
Freehub body clamp nut	Hand-tightened	8 Nm
Display clamp screws		0.6 Nm
Control device		1 Nm

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