GO SwissDrive.

ORIGINAL-BETRIEBSANLEITUNG

GO SwissDrive Antrieb

OPERATING INSTRUCTION

GO SwissDrive System

LEISTUNGSSTARK

250 Watt Leistung und bis zu 70 Nm Drehmoment sorgen für genügend Vortrieb auf der Straße und im Gelände.

POWERFUL

250 watt rating and up to 70 Nm torque provide adequate assistance on the road and in the countryside.

REKUPERATION

Optimale Energienutzung: der Motor erzeugt beim Bremsen Energie und speist diese direkt in die Batterie ein.

REKUPERATION

Optimal use of energy: The motor generates energy during braking and stores this directly in the battery.

IP 64 KONFORM

Offroadqualitäten: Der Motor des GO SwissDrive Systems ist nach IP64 resistent gegen Staub und Spritzwasser.

CONFORMS TO IP 64

Offroad qualities: The motor of the GO SwissDrive System can withstand dust and spraying water in compliance with IP 64.

LITHIUM-IONEN TEC.

Kein Memory-Effekt, kaum Selbstentladung, hohe Lebensdauer des Akkus – so ist Ihr Rad jederzeit einsatzbereit.

LITHIUM-ION TEC.

No memory effect, almost no self-discharge, long battery life – your pedelec is ready for use at any time.

KAPAZITÄTSANZEIGE

Prüfen Sie die Ladung des Akkus sogar noch vor Antritt der Fahrt bequem direkt an der Batterie.

CAPACITY DISPLAY

Check the state of charge of the battery directly before setting off. Convenient checking directly at the battery.

VOLLE KONTROLLE

Das Display zeigt Ihnen jederzeit übersichtlich Verbrauch, Durchschnittsverbrauch und Restreichweite.

FULL MONITORING

The display shows you clearly and at any time the consumption, average consumption and remaining range.

ALLES IM GRIFF

Montiert an der Lenkerstange befindet sich das Display jederzeit in Sicht- und Griffweite.

ALL UNDER CONTROL

The display is mounted on the handlebars to be in view and to hand at all times.

DYNAMO-FUNKTION

Selbstverständlich kann der Motor auch zur Stromerzeugung für die Lichtanlage am Rad eingesetzt werden.

DYNAMO FUNCTION

The motor can of course be used to generate power for the lighting system on the pedelec.

KURZE LADEZEITEN

Unser optimiertes Ladegerät ermöglicht enorm kurze Ladezeiten.

SHORT CHARGING TIMES

The charging unit has been optimized to extremely short charging times.

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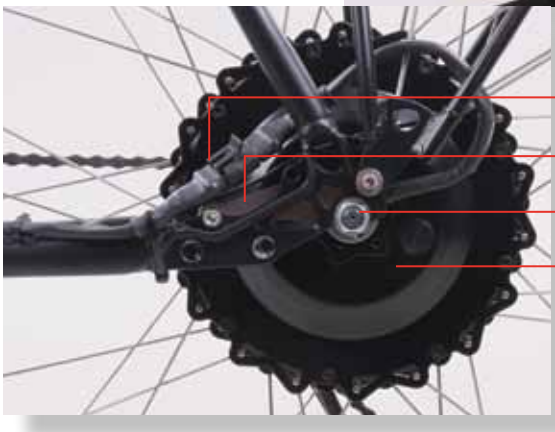

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BAUTEILBESCHREIBUNG

1 Start-/Stopp-Taste

Display

2 Oberer Bereich
Unterstützungsgrad / Rekuperationsstufen
Kapazitätsanzeige Batterie

3 Mittlerer Bereich
Geschwindigkeitsanzeige

4 Unterer Bereich
Wechselnde Systemanzeige, Tachofunktion
Warnhinweis / Fehlermeldungen

5 Speed-Taste
6 Modus-Taste
7 + Taste
8 – Taste

9 Ladebuchse
10 LED-Anzeige Taste
11 LED Ladestandsanzeige

12 Motorstecker (Kabelbaum)
13 Drehmomentstütze
14 Achsmutter
15 Motor

COMPONENT DESCRIPTION

1 Start/Stop button

Display

2 Upper area
Assistance levels / recuperation levels
Battery capacity display

3 Middle area
Speed display

4 Bottom area
Changing system display, speedometer function
Warning/error messages

5 Speed button
6 Mode button
7 + button
8 – button

9 Charging socket
10 LED display button
11 LED charging state display

12 Motor plug (cable loom)
13 Torque arm
14 Axle nut
15 Motor

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Edition 1, April 2012

1. WELCOME

Dear Customer,

Thank you for having bought a GO SwissDrive system. Our 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 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 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 to someone else.

We wish you a great deal of enjoyment and good riding with our drive system.
The **GO SwissDrive** Team

2. SOME NOTES ON THE TRANSLATION OF THE ORIGINAL INSTRUCTION MANUAL

Pay particular attention to the following symbols:

This symbol provides you with information about how to handle the product or refers to a passage in the instruction manual that deserves your special attention.

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

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

This translation of the original instruction manual is not intended to be used to retrofit a standard bicycle with the GO SwissDrive system. It does not describe the work steps that are required.

This manual complies with DIN EN 15194, but only with regard to the drive unit components.

3. INTENDED PURPOSE AND LEGAL BASIS

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. This means that there are no restrictions for you; you may use your pedelec as a bicycle without any restrictions.

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 GO SwissDrive nonetheless recommends you to use a cycling helmet and cycling glasses (1).

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

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4. BEFORE YOUR FIRST RIDE

4.1 Starting up for the 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 **(2)** as described in the section **"Battery and charging"**.

2. Make sure that you are familiar with the functions of your GO SwissDrive system **(3)**.

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 **"Control element"** 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 **(4)** 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.

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

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4.2 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 displays.

You can find further information on the control element in the section **“Control element”**.

4.3 Riding information

Your GO SwissDrive system supports your effort at the pedals to varying degrees **(1)**. You can select this at the control element **(2)**. If you do not turn the pedals then you get no drive assistance. At 25 km/h 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 three levels in recuperation mode **(3)**. 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 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 that there is no energy recuperation option when riding downhill if the battery is already fully charged.

The riding characteristics of a pedelec/e-bike 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 over your pedelec and only make use gradually of the full potential of the pedelec after that.

Read the tips on riding a pedelec in the general bicycle user manual and the pedelec instructions (4) from the maker of your pedelec.

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.

Never touch the motor or the rear wheel while using your pedelec/e-bike.

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5. BEFORE EVERY RIDE

5.1 Safety of your pedelec/e-bike

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.

5.2 Display of the state of charge

The state of charge of the battery is displayed by five LEDs **(1)** when you press the button at the battery. Here each LED corresponds to around 20% of the capacity. This means that if one LED is lit up then 0 to 20 % of the full charge is available **(2)**, if 5 LEDs are lit up then 81 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 as long as possible. A good rule of thumb is that you should recharge the battery when only three LEDs light up.

You can find further information on the control element in the section **“Battery and charging”**.

6. BATTERY AND CHARGING

6.1 Safety instructions

Read and follow all the notes and instructions on handling the battery safely.

Incorrect use of the battery can lead to damage. Following these instructions prevents a possible electric shock, injuries and overheating/fires.

1. Only use the original charging unit that has been supplied with the battery **(3)**. If that instruction is not followed there is a risk of the battery overheating and becoming damaged.

2. The battery may only be used with the motor and controllers that had been designed for it. Using the battery in connection with other devices can lead to dangerous overloads.

3. Only handle the battery when the motor/system of your pedelec/e-bike has been switched off.

4. Remove the battery of your pedelec/e-bike before starting any work on it, such as installation or repair work.

5. Remove the battery before transporting your pedelec/e-bike, for example, when transporting it in a carrier system in or on a car. Only transport the battery in its original transport box and packing **(4)**.

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6. Prevent the on/off switch of your pedelec/e-bike from being operated accidentally. That could entail a risk of injury due to an uncontrolled starting up of the drive system.

7. Never attempt to repair the battery in any way at all. Handling the battery incorrectly could result in damage to the internal protective circuitry and lead to a short circuit. The warranty is immediately and completely null and void if the battery is opened.

8. Keep any objects that could cause a short circuit (for example, metallic objects such as paper clips, coins, keys, nails, screws, bolts) well away from the contacts and plugs of the battery.

9. When laying the battery down, ensure that the contacts and plugs cannot come into contact with metallic surfaces and objects.

10. Protect the battery against sustained heat, excessive direct sunshine, dampness and moisture, and do not allow it to be dipped into liquids or covered with them **(1)**. That would bring a risk of damage and with it a short circuit and overheating of the battery **(2)**.

11. Never bring the battery into contact with an open fire, never lay the battery down on a hot stove, in a microwave oven or an ordinary oven, as there is a risk of explosion. Only charge the battery when it has been placed on a fire-resistant surface that cannot burn, such as glass or ceramics.

12. The battery cells that are used are protected against explosion by a predetermined breaking point. However, in extreme cases incorrect handling such as excessive heat or mechanical damage could lead to the predetermined breaking point opening up and the battery fluid escaping or vaporising.

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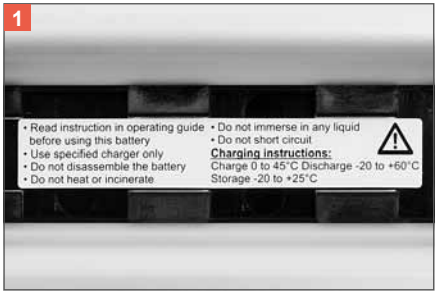

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Never touch or swallow the battery fluid! If vapours escape from the battery then ensure that there is good ventilation. Escaping battery fluid or vapours can cause skin irritation. If you accidentally come into contact with the battery fluid wash it off at once with copious amounts of water. Contact a doctor at once if there is severe skin irritation, if the fluid has been swallowed, if the respiratory passages are irritated, or if the battery fluid gets into the eyes.

6.2 Use of the battery

Only lay the battery down on clean surfaces to prevent the charging socket and contacts from getting dirty, for example, due to sand or earth. Always keep the battery dry.

6.2.1 First use/starting up for the first time

When you get the battery it is in transport mode and is inactive. In this state the state of charge display of the battery is not available. The battery must be charged to activate the battery.

Fully charge the battery before it is used for the first time until all the LEDs light up when the LED display is activated **(3)** or when the charging unit shows that the charging process has been completed.

6.2.2 Charging the battery

Only use the original charging unit that was supplied with the battery **(4)**. This gives the best charging results and avoids the risk of explosion that can arise due to incompatibility. Failure to do so can lead to a risk of explosion!

Never charge a battery that has visibly been damaged. Do not use a damaged battery. In such a case, immediately contact an authorised dealer.

The battery can also be charged from the upper charging socket while it is still installed in the pedelec/e-bike.

- First of all, connect the battery to the charging unit **(1)**.
- Then insert the mains plug of the charging unit into the socket **(2)**.
- Do the above in the reverse order to end the charging process.
- You can stop the charging process at any time.

In general, the batteries of pedelecs/e-bikes have no memory effect. It is best to charge the battery after each longer ride, for example, if only three LEDs of the state of charge display on the battery light up. Avoid any deep discharging of the rechargeable battery.

For preference you should charge the battery at ambient temperatures between 5 and 30 degrees Celsius. The internal temperature monitoring system, which only permits charging over a temperature range between 0 and 40 degrees Celsius, protects the battery against incorrect handling.

The battery warms up slightly during the charging process. This is normal in operation.

Only charge the battery when it has been placed on a fire-resistant surface that cannot burn, such as glass or ceramics.

6.2.2.1 Deep discharge

If the battery has been fully discharged and is left uncharged for a long time then it can fall into an inactive operating state. Then the state of charge display is no longer active. In such a case proceed as described in the section **"First use/starting up for the first time."**

If the battery cannot be activated as described in the section **"First use/starting up for the first time"** then it must be checked by a dealer.

You can find further information on deep discharge in the section **"Resetting the battery."**

6.2.3 Removing the battery

Turn the system to Off at the control element before removing the battery. If you fail to do that you might damage the system electronics or the contacts of the battery-motor unit.

In order to remove the battery, open the battery lock with the key **(3)**. The lock cylinder then protrudes. The battery can then be removed.

Do not allow the battery to be removed while riding.

6.2.4 Inserting the battery

Switch the system Off at the control element before inserting the battery.

After inserting the battery **(4)** press the lock cylinder back in and check that the battery is seated properly. The battery must be firmly seated. The lock has clicked into place and closed properly. This prevents the battery from falling out.

Take out the key to prevent theft and to avoid any risk of injury when using your pedelec/e-bike.

Do not allow the battery to be inserted while riding.

6.2.5 Handling and care of the battery

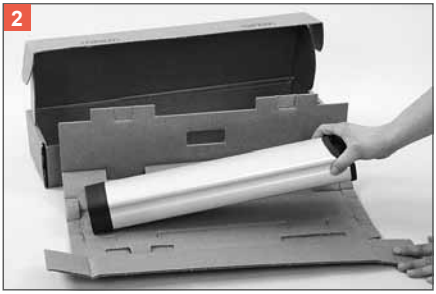
Good care, proper operation in accordance with the instructions and storage at the correct temperatures have a positive effect on the life of your battery.

We recommend operating temperatures between 5 and 35 degrees Celsius. If the outdoor temperature falls below this range, we recommend that you keep the pedelec, or at least the battery, in a warmer place. Put it back in just before you use the pedelec **(1)**. This means that you have available the full power and the full capacity of the battery.

Do not recharge the battery if it is very cold. Wait until the battery is not so cold, for example, when it is warmer than 10 degrees Celsius.

Do not leave the battery permanently connected to the charging unit. This could damage the battery or the electronics if it is done for a prolonged period.

If the battery has been fully discharged, you should recharge it again at once. This increases the life of the battery and prevents a deep discharge.



6.2.6 Storage of the battery and the pedelec

If the battery is stored for a longer period in an uncharged state this can cause permanent damage to it. That applies in particular if the battery is stored under conditions of high temperature and high relative humidity.

Keep the battery in a cool and dry place **(2)**. The ideal temperature range for longer periods of storage is between +5 and +20 degrees Celsius.

If the battery is not going to be used or else is to be stored for a long time, charge the battery before it is stored so that up to three or four LEDs light up at the state of charge display, which corresponds to around 60 to 80% of the total battery capacity.

It is essential to check the state of charge again after three months. If the state of charge has reduced (fewer than three to four LEDs light up **(3)**), then charge the battery up again to around 60 % of the total capacity (three to four LEDs) **(4)**.

A battery that has been stored discharged for a longer period of time can still be damaged despite a small amount of self-discharge and the storage capacity can be severely reduced due to the deep discharge.

Follow the instructions on storage of the entire pedelec/e-bike given in your general bicycle user manual.

6.2.7 Resetting the battery

The battery has protective circuitry to detect defective states, such as a short circuit at the plugs or an excessively high temperature.

The circuit is cut off entirely if such an error state exists for a longer period.

If the battery is perceptibly warm then first let it cool down completely.

The battery can be reset and then restarted by pressing the LED display button at the battery **(1)** for around eight seconds. The battery is restarted if the error states that had existed before have gone.

Check after riding a few metres whether the display of the battery functions properly. If you continue to have any difficulties then contact a dealer.

If this is still not adequate, then at least charge the battery briefly **(2)** to conclude the starting process.

If the problem that caused the fault is still there, then the circuit remains switched off. In such a case you should contact your dealer.

7. CONTROL ELEMENT

The control element **(3)** is a means to communicate with the drive system.

Here you have a means that is within easy reach to switch the system on and off, to select the level of drive assistance, and to view various items of information on the system.

The control element is protected against dust and spraying water to the IP 64 standard. However, it is still necessary to protect the display against strong wind and penetrating moisture by means of a suitable covering when transporting the pedelec on a bicycle carrier.

7.1 Button functions

The following describes the various buttons and display functions of the control element.

The Start button **(4)** activates the entire drive system. The display should light up shortly after you press this button and the entire system should be ready for use.

By using the + button **(5)** you can increase the assistance level of the drive system and reduce it by means of the – button **(6)**.

The drive system offers five assistance levels and three recuperation levels (the feeding back of recovered energy into the battery and motor braking).

Press the Mode button **(1)** to cycle through the various display functions on your travelling data in the lower line of the display.

The Speed button **(2)** activates the pushing or starting aid and accelerates the bicycle up to a set speed (max. 6 km/h).

7.2 Basic settings

The control element of your GO SwissDrive system gives you a great deal of information and a high degree of convenience. It is necessary to make at least a certain number of settings before the first ride to be able to guarantee these properties.

If possible, have this adjustment done when you collect your pedelec/e-bike from the dealer.

You must set the exact circumference of your tire, the brightness of the display and the optimum contrast for it. Do this as follows:

1. Turn on the display / control element with the Start button when the battery is installed. Cycle through the lower line of the display with the Mode button **(1)** until the menu for the total number of kilometres appears with the designation “Tot” (for “Total”) **(3)**.
2. Then hold down the Mode button **(1)** for at least 2 seconds.
   A four-digit flashing number **(4)** then appears, which you can change with the + and - buttons **(5)**. Please set here the circumference of the tire of your pedelec/e-bike.

If possible, have this adjustment done when you collect your pedelec/ e-bike from the dealer.

3. If you press the Mode button again you go in the menu to the option to set the brightness of the background illumination (“LEd”) **(6)**, which you can likewise change with the + and - buttons.

4. Press the Mode button again to bring up the menu to set the contrast (“LCd”) **(7)**. This can also be adjusted by pressing the + and - buttons.

5. Press the Mode button **(8)** again for a long time to save the settings and then to quit the menu.

7.3 Operating functions

You can directly affect the driving behaviour of the drive system with the +/- **(1)** and Speed **(2)** buttons.

1. You can select the five positive drive assistance levels (1 to 5) and the three recuperation levels (-1 to -3) with the +/- buttons. Press the + button to raise the level, and the - button to reduce it. The higher the drive assistance level (the maximum value is 5), the more strongly you are assisted by the motor up to a speed of 25 km/h. The amount of energy used rises correspondingly.

The recuperation action of the motor (the feeding back of recovered energy into the battery and motor braking) is correspondingly strongest at the lowest level (-3).

2. The use of the Speed button **(2)** leads to operation of the motor without additional pedalling. This function, also called the pushing or starting aid, is intended to make it easier for you to push the pedelec/e-bike and to go up steep ramps or if the bicycle is heavily loaded. It is necessary to slightly push the pedelec/e-bike by hand or to start off with the pedelec/e-bike until the starting aid takes effect. The assistance stops as soon as you release the button.

Use of the starting aid is legally permissible in the range from 0 to 6 km/h.

Your dealer has the equipment to modify the speed in this range by means of the GO SwissDrive Servicetools.

7.4 Display functions

The display of your control element is divided into three areas.

1. The upper static area **(3)** displays the selected level of drive assistance and the capacity display of the battery.

   The selected level of drive assistance **(4)** and the capacity **(5)** of the battery are shown by 1 to 5 bars in the upper static area of the display of the control element. Here each bar stands for 20 % capacity, i.e., one bar corresponds to 20 %, 2 bars to 40 %, 3 bars to 60 %, 4 bars to 80 % and 5 bars to 100 % .

   In addition, the three recuperation levels are likewise displayed there with -1 to -3 **(6)**.

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2. The middle segment shows the current speed of travel **(1)**.

3. The bottom segment **(2)** shows alternating functions regarding the drive system and drive operation.

   It gives you useful information on the system and your journey. This is done in combination with the displayed numbers with the symbols that are shown.

For example, the „Tot“ display in conjunction with the „33“ **(2)** shows the total number of kilometres travelled with the pedelec/e-bike (total kilometres, in the graphic 33 km/h).

Regarding your journey, the following can be shown in addition to the display of the total number of kilometres:

- the number of kilometres currently travelled **(3)**
- the average speed **(4)** and
- the maximum speed **(5).**

In addition to these functions, the control element provides specific information for you on the consumption, which is likewise displayed in the bottom line. For example, the remaining range in kilometres is displayed here.

In addition, the display can also show you here the amount of CO_2 saved **(6)**.

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The plug symbol in conjunction with the battery symbol and the numbers behind them shows the remaining range in kilometres on the basis of your current riding style **(7)**. Moreover, the current consumption **(8)** and the average consumption **(9)** can be displayed in addition to the remaining range.

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7.5 Warning information and error messages

The display offers even more information for you, depending on the operating state. These include early warnings and error messages.

7.5.1 Early warnings

The display can show early warnings to prevent possible faults in the system at any early stage. This includes in particular the warning concerning overheating of the motor and the battery,

Before the motor or the battery overheat and correspondingly begin to reduce their performance, you are informed of this on the display.

The warning of overheating of the system is shown on the display by the motor or battery symbol and a thermometer, which by way of example is shown for the case of motor overheating.

The combination of the motor symbol and the thermometer thus notifies you that the motor is overheating **(1)**, and the combination of the battery symbol and the thermometer correspondingly warns you that the battery is overheating **(2)**.

Adapt your riding style and/or the levels of drive assistance according to these warnings if you wish to avoid a temporary reduction in or even a complete loss of the drive assistance.

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7.5.2 Error messages

Categorized error messages for the system can likewise be shown on the display. The explanations for the error number are given in the error codes table below.

Error code	Cause and possible correction
Error 20	Unexpected communication from the bus. Restart the system.
Error 22-27	Control element cannot send on the bus. Unplug the motor and/or battery and plug them back in again. Check that the plugs and contacts are OK.
Error 40	A bus sharing unit does not reply correctly in terms of timing.
Error 41-43	Transmission error by bus sharing unit. Restart.
C0 Error	Reply from the motor is missing. Check the contact to the motor.
Battery symbol missing	Battery has no bus.
Flashing motor symbol “M”	Motor has generated an error message. Restart the system. Unplug and put back in the motor plug.
Flashing battery symbol	Battery has generated an error message. Restart the system. Unplug and put back in the battery.
Flashing motor and battery symbol	System error, for example, switching off because the voltage was too low.
Thermometer with battery or motor symbol	(Early warning of) overheating.

An error is shown on the display with its error number for two seconds after its occurs.

In addition to the error code, the battery or motor symbol is shown flashing.
Flashing of the battery or motor symbol means an error.

If you could not read the error message in the two second interval, you can call up the last error from the display menu. Do this by going into the sub-menu of the display as described in the section **“Basic settings.”**

In the sub-menu, in addition to the setting options for the circumference of the tire and the other functions there are also two sub-items labelled “err” and “bErr.” “Err” and the number shown indicate the last motor error, while “bErr” and the number shown indicate the last battery error. You can find an overview of the error messages in in the above error codes table.

8. CARE AND MAINTENANCE OF THE SYSTEM

8.1 Care of the system

The motor, which is the heart of your GO SwissDrive system, is maintenance-free. That means that you do not have to do any maintenance work.

In general, the other components of your GO SwissDrive system are also maintenance-free, apart from the fact that the battery must be charged up regularly. However, always pay attention to cleanliness.

If your pedelec/e-bike should require any maintenance, then have it done only by an authorized GO SwissDrive dealer.

The following describes the steps regarding care or cleaning of your pedelec/e-bike, and also the required steps to remove components.

Always remove the battery first before carrying out any care work on the system **(1)**. Never clean the battery with anything that is damp, let alone wet. Take especial care that the contacts do not get wet.

It is best to clean the battery and the remaining system parts with a slightly damp cloth **(2)**. Do not get any water on the contacts and plugs.

Never clean a pedelec/e-bike fitted with the GO SwissDrive system using a high-pressure cleaner or a jet of water from a hose. Use a slightly damp cloth or sponge to clean the system, but never use anything that is actually wet.

Never press the buttons while cleaning the control element or doing care work on it.

Opening the motor or any parts of the motor makes the warranty null and void at once and means that you cannot make any claims under warranty.

Never remove the type label from the motor. This is used to identify the motor and to display the statement of legal conformity in compliance with the relevant sections of standard DIN EN 15194. Deliberately removing the label leads to the warranty becoming null and void. The same applies to the battery (3).

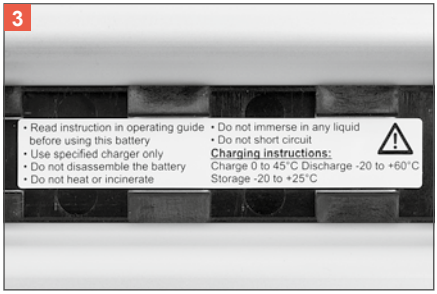
As a matter of principle, have your pedelec/e-bike serviced by an authorized dealer at the intervals specified in your general bicycle user manual (4).

8.2 Maintenance of the system

8.2.1 Removing the rear wheel

It can become necessary to remove the rear wheel if there is a tire problem or else to service the gear components.

Before you remove the rear wheel, read the sections “Wheel Removal”, “Wheel Mounting” and “How to Use Quick-Releases” in your general bicycle user manual. If you are in doubt or if you have any questions, then contact your bicycle dealer.



Since the rear wheel contains the drive unit of your GO SwissDrive system, please carry out the work as follows:

1. Turn the system to **Off** at the control element and then remove the battery **(1)**.
2. Turn the display on and off once again after removing the battery while the rear wheel is stationary so that there are no residual voltages in the system.
3. Set up your pedelec/e-bike so that the rear wheel can be removed. Ideally, you should clamp your pedelec/e-bike in a suitable assembly stand for such work. In view of the high weight of your pedelec/e-bike, it is best to ask someone to help you.
4. Set the gears to the smallest sprocket at the rear wheel (highest gear), this makes removal and replacement of the wheel easier.

It is necessary to first remove the Bowden cable at the brake calliper if the bicycle has mechanical rim brakes (cantilever and V-brakes). If disk brakes (hydraulic or mechanical) are fitted, see first where the brake pads and their wear indicators (metal lugs/projections) are seated. Later you can tell from them whether the pads are still at the proper place after removal. Read the instruction manual from the brake maker.

4. Remove the motor plug from the cable loom **(2)**. Do this by undoing the locking clamp and pulling the plug apart. Also undo the cable ties for the motor cable fastening **(3)**, if there are any.
5. Depending on the type of fastening, either undo the quick-release levers or, in the case of locking skewers **(4),** using the associated special tool or else undo the M10 axle nuts on both sides, using a 17 mm ring spanner or open-end spanner.

6. Undo the torque arm from the frame **(5)** by removing the screw of the torque arm at the frame.

Once both nuts have been undone sufficiently, the rear wheel can fall out by itself. Hold the rear wheel in the frame with one hand or else get help from a second person to do this in view of the high weight.

In order to make it easier to remove the rear wheel, slightly pull the rear derailleur to the rear by hand **(6)**. Pull the pedelec/e-bike up a little and slap the wheel, it should now slide downwards.

7. You have now removed the rear wheel together with the motor.

If you have completely removed the nuts from the axle the torque arm can drop out. Put it down together with the nuts and washers in the order of removal at a clean and secure location.

Before removal, switch the gear to the smallest sprocket. The rear derailleur is now completely outside and does not get in the way of dismantling.

8.2.2 Installing the rear wheel

1. If the torque arm is not sitting on the motor, install it at the anti-twist lock on the motor shaft **(1)**.

2. Switch to the highest gear so that the rear derailleur is completely outside. Now you can insert the rear wheel into the drop-outs of your pedelec/e-bike.

   Ensure that the cable outlet of the motor is behind the axle when it is installed and that the torque arm has been turned such that it can be attached to the frame.

   Now you can insert the screw for the torque arm and rotate the nut slightly. Ensure that the parts are installed in the correct order **(2)**.

3. Now you can evenly tighten up the M10 axle nuts **(3)**. Pay attention to the washers between the frame and the axle nuts. These must lie flat. It is essential to tighten up the axles nuts to 45 Nm, using a torque wrench.

Only use self-locking M10x1 nuts. Original replacement nuts can be obtained from your dealer as GO SwissDrive spare parts.

4. Now you can fix the screws of the torque arm to the frame at the specified torque of 8 - 9 Nm* **(4)**.
   * Note any restrictions listed by the frame or wheel maker.

5. Immediately put back the Bowden cable of rim brakes after installing the wheel! In the case of hydraulic rim brakes, immediately put back the brake unit and close the quick-release levers **(5)**! Ensure that the brake unit does not touch either the rim or the tire or the spokes when the wheel turns. In the case of a disk brake, pull on the brake lever until a solid pressure point is set. It must not be possible to pull the brake lever back to the handlebars.

   You can find further information on this in your general bicycle user manual.

6. Check on the display at the control element that the system has been switched off. Only then should you connect the motor to the cable loom. Do this by connecting the motor plug to its counterpart in the cable loom **(6)**. Ensure that the connection at the plug is not reversed (geometric alignment). Always connect the plugs slowly and with care, without using force.
   Pay attention to the seal at the plug. When the plug is connected it must sit exactly in the requisite bush to ensure proper sealing.

7. Last of all, attach the cable loom to the frame with cable ties so that it does not stick out to the side and so that it cannot get into the spokes of the rear wheel or rub against the motor.

Always use a torque wrench for assembly and follow the specified torque values.

Handle the plug carefully to prevent it from being damaged and thus not sealing properly.

9. ASSEMBLY INFORMATION

9.1 Installing a brake disk

It is possible to install a standard 6-hole brake disk at your GO SwissDrive motor. Only use brake disks with a diameter of ≥ 180 mm.

Special T25 screws must be used due to the special shape.

Only M5x7 screws in compliance with ISO standard 7380 may be used with brake disks with a thickness of 2 mm.

1. Paying attention to the direction of rotation, as marked, place the brake disk onto the matching seat on the GO SwissDrive motor.
2. Tighten up all the screws by hand by two or three turns.
3. Then evenly tighten all the screws up a little.
4. Turn the brake disk against the direction of rotation and hold it there.
5. Finally, tighten up all the screws in a diagonal pattern to the final tightness, using a torque wrench. The specified torque is 5 Nm.

Only use original GO SwissDrive screws, which you can buy from an authorized dealer.

9.2 Freewheel

Only original GO SwissDrive replacement freewheel units are to be used due to the special dimensions. Tighten up the freewheel unit to max. 8 Nm.

9.3 Table of tightening torques

Part	Notes	Tightening torque
Brake disk screws	T25, M5x7	5 Nm
Axles nuts	M10 x 1, self-locking	45 Nm
Torque arm	At the frame	8 - 9 Nm*
Freewheel unit locking nut	Do up hand-tight	8 Nm
Display clamping screw		0.6 Nm

* Note any restrictions listed by the frame or wheel maker.

10. TERMS AND CONDITIONS OF WARRANTY

Regardless of the legal requirements, GO SwissDrive offers you a one year warranty on the components of the drive system.

Furthermore, 300 charging cycles of the battery are guaranteed if it is handled properly.

If a defect or deficiency should appear in this time, then please contact the dealer from whom you bought your pedelec/e-bike.

Bring the receipt and proof of maintenance work so that the complaint can be dealt with quickly.

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