

Operating Manual Lohner-Falkon®



OPERATION
SERVICE
MAINTENANCE
SECURITY

EU



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2. Foreword

Dear Customer,

Congratulations on your new Lohner-Falkon®.

You have chosen outstanding quality - and you will be riding environmentally consciously!

In the following pages we will introduce you to your Lohner-Falkon® with regard to details, you will get important information on operation, as well as technical tips and tricks for maintenance and care and important information for your personal safety to protect yourself from accidents and the bike from damage.

We wish you a pleasant ride at all times!

Please read these operating instructions carefully, they contain important information so that you can enjoy your bike for a long time!
Please read the "Operation" section carefully before your first ride.
Always wear a helmet!

Please contact us if you have any questions or problems!

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3. Technical Data and Variants

Highlights:

- 2 seats
- Storage space approx. 8 liters, lockable
- Covered tubular steel frame
- Wide angle LED front headlight
- LED light tail light included
- Speedometer function via the Lohner App (iOS, Android)
- Electronic immobilizer via the Lohner App (iOS, Android)

Weight and load:

- Initial weight: 35 kg
- Maximum load: 150 kg

Suspension fork:

- Reinforced suspension fork with 100 mm give.
- The suspension fork can be locked.

Tires:

- Maxxis Black with reflector strips (26" x 2.1)

Gearshift:

- Microchip 8 gear

Brakes:

- Front and rear hydraulic disk brakes (\varnothing 180 mm)
- With automatic recuperation when the brakes are applied

Power system:

- Nominal motor power: 250 W or 500 W (depending on applicable national laws)
- Maximum motor power: 800 W or 1000 W
- Nominal motor torque: 22.7 Nm
- Maximum motor torque: 40 Nm
- Drive type: electric by wheel hub motor in rear wheel
- Torque-controlled power development by step sensor
- Throttle grip or slide mechanism (depending on national legislation)
- Power levels: 3-level
- Recuperation: 1-level (adjustable when braking or permanently)
- Maximum speed: 25 km/h (depending on applicable national laws)
- Range: up to 160 km, pedelec operation at lowest level, level terrain



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Battery:

Lockable and removable on the Lohner-Falkon®
Battery: Li-Ion 48V, 14 Ah
Battery capacity: 672 Wh
Charging time: 6 h with 3A power supply

Display and operation:

Speedometer functions with the Lohner App® Smartphone (Android, iOS) via Bluetooth
Throttle grip (or as a sliding mechanism, depending on national laws)
Brakes with automatic recuperation
Suspension fork locking
USB charging cable included

Security:

Electric immobilizer adjustable via App (iOS, Android)
Mounting device for frame lock available
Lockable glove compartment
Lockable battery

Operating temperature:

Minimum: -10 °C
Maximum: 60 °C

Available colors:

Diablo Black
Hello Yellow
Racing Green
French Blue



4. Safety Instructions



This symbol means attention, warning. This is about your safety!
It is imperative that instructions with an exclamation mark are observed and followed.

4.1. General information

By using your Lohner-Falkon® properly, you can minimize the risk of injury and damage to property. We would like to inform you that changes to the delivery condition of the Lohner-Falkon® may lead to restrictions of the functions and that Lohnerwerke GmbH & Co KG assumes no liability for this.

Please observe traffic regulations. You are responsible for the proper maintenance and use of your Lohner-Falkon®. With proper maintenance and care you will retain the original functionality of the product.

Make this instruction manual available to every user.



- Cycling in any form is not without risk. Therefore, always wear a suitable and correctly adjusted helmet!
- Make sure that the brakes are working properly before each ride. If you notice any malfunctions before riding, do not start riding. Leave the repair of the brake system to a specialist.
- With your Lohner-Falkon® the left brake lever is the front brake and the right brake lever the rear brake.
- Regularly check that the pedals are firmly in place.
- Regularly check that the tire pressure is correct.
- Before using the Lohner-Falkon® always carry out a short visual and functional check for obvious defects, i.e. proper brake condition, tires, tire pressure, lighting, as well as fasteners and electrical components. If the product is not in proper condition, the Lohner-Falkon® must not be used.
- Never make any changes to the Lohner-Falkon® yourself, especially to the frame, tires, brakes, electronics or other safety-relevant components.
- Use only if you are in a suitable physical condition and, for example, have no relevant impairment of the cardiovascular system or sense of balance.
- Use only if you are not impaired by alcohol, medications, or drugs.
- Only use the steering position as intended, i.e. sit only on the saddle, both hands on the handlebars and both feet on the pedals.



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- Only use the passenger seat in the intended manner, i.e. seat only on the saddle, both hands on the handles and both feet on the footrests. If this is not possible due to limited height, riding is forbidden.
- Children who cannot reach the footrests safely due to their height may only be seated in child seats which have been approved by the manufacturer.
- Never place more than 2 people on the Lohner-Falkon®.
- The maximum payload (persons + any goods to be transported) of more than 150 kg must never be exceeded.
- Always adapt your riding style to the load, the traffic volume, the weather conditions and the surface.
- Never lean so strongly into a curve when cornering, such that there is a danger that the Lohner-Falkon® could skid sideways.

4.2. Battery



- Only use the supplied charger to charge the batteries. Using other chargers can, in the worst case, lead to serious malfunctions or even a battery fire.
- Cells or batteries must not be short circuited and must not be stored dangerously in a box or drawer where they can short circuit each other or with other conductive materials. Fire risk!
- Cells or batteries must not be exposed to heat or fire. Avoid storage in direct sunlight.
- In order to avoid damage to the battery, do not subject the battery to intense physical shock or permanent vibration.
- A battery with damaged housing may no longer be used.
- Only use the battery at temperatures between -10°C and 60°C
- Do not let children handle the battery.
- At the end of its service life, dispose of the battery. Please observe the waste disposal instructions of the local waste disposal company.
- Transporting or carrying the battery in carry-on baggage of aircraft is strictly prohibited. Please ask your travel company about the applicable safety regulations and the possible transport of the battery.
- If the battery will not be used for an extended period of time, remove it from the bike and store it separately at room temperature in a fully charged state.
- If the battery is to be stored for a longer period of time, it must be in a charged state. The storage temperature should be between 0°C and 40°C. Ensure dry storage.



4.3. Charger



- The charger is intended for indoor use only.
- The power supply is AC 110-240 V 50/60Hz
- No other chargers may be used other than those specially designed for use with the bike system.
- It is forbidden to open the charger
- Never touch the charger or the plug with wet hands.
- The charger and battery are not toys and do not belong in the hands of children.
- Do not use the charger if there is a lot of dust or high humidity.
- Ensure there is adequate ventilation when the charger is in use.
- Unplug the charger from the electrical socket when not in use.
- Observe the information on the charger label.
- This charger is not intended to be used by persons (including children) with limited physical, sensory or mental abilities or who lack experience and/or knowledge, unless they are supervised by or have received instructions from a person responsible for their safety on how to use the charger.
- If the power cord of this device is damaged, the device must be replaced.
- Charging temperature: Only charge your battery at temperatures between 5°C and 40°C

4.4. Transportation with a bicycle rack on the car



- Please note the load capacity of your bicycle rack!
- If you want to transport your Lohner-Falkon® on a bicycle rack, the battery must be removed before transportation and stored in the car.

5. Intended Use

The intended use is riding alone or in pairs on cycle paths and in road traffic. The use of accessories, attachments and spare parts not approved by the manufacturer or distributor is forbidden. Failure to comply with this will invalidate any liability and warranty on the part of the manufacturer or the distributor.

Furthermore, regular maintenance of the safety-relevant components is part of the intended use.



Any other use or use exceeding this is considered be unintended. The user alone bears the risk for any resulting damage. National regulations are to be complied with accordingly, irrespective of the current documentation.

This e-bike has been constructed according to state-of-the-art technology and engineering according to recognized safety rules. Nevertheless, there may be danger to life and limb of the user or third parties or damage to the e-bike itself or other property. Please read the safety instructions carefully. The e-bike may only be operated in a technically faultless condition and in accordance with its intended use, safety and danger awareness.

In particular, defects which impair safety must be corrected immediately. It is not recommended to ride with a damaged bike.

6. Construction and Assembly

Depending on the delivery variant, your bike can come disassembled in different ways. In any case, all tools required for assembly are included in the delivery.

6.1. Unpacking the Lohner-Falkon®

Open the box with extreme caution to avoid damage. Dispose of the box and packaging material separately.

6.2. Mounting the front wheel

First remove the spacer from the front brake caliper.



After removing this spacer, do not apply the brake, otherwise the disk brake of the front wheel cannot be mounted freely.



Figure1: View of quick release axle

Take the front wheel and position it between the forks. The brake disk should then be on the left-hand side in the direction of travel. You must ensure that the brake disk is threaded into the brake caliper provided for this purpose. Now guide the \varnothing 10 mm quick release axle from right to left through the first fork post, the front wheel and the second fork post. Turn the lever clockwise to fasten the quick release axle. Press the lever to achieve the required pretension. The tensioning lever must point to the rear as shown in Figure1 the figure.



Make sure that the lever of the quick release axle is aligned to the rear (against the direction of travel).



6.3. Mounting the handlebars

First loosen the 4 screws of the handlebar stem (Figure2) with the enclosed hex wrench and put the cover aside. Now you can place the handlebars with the bulge, which is in the middle of the handlebars, in the mounting shell of the stem.



Figure2: 4 handlebar screws



Make sure that the throttle grip is on the right side. Adjust the angle of the handlebar according to your needs.

Make sure that the handlebars are adjusted so that the brake levers do not collide with the cladding parts when turning. (Figure3)

Now take the cover of the handlebar stem and fasten it again with the 4 previously loosened screws.



Make sure that you do not open the screw of the steering bearing (Figure4) under any circumstances. This adjusts the steering bearing clearance and is correctly pre-assembled at the factory.



Figure3: Observe the distance between the cladding part and the brake lever



Figure4: Screw for adjusting the steering bearing



6.4. Installing the battery

The battery is inserted into the bicycle (Figure5) from the rear and pushed onto the battery rail provided for this purpose. The battery locks with a distinct click. Afterwards it is mounted correctly.



When mounting the battery, make sure it is turned off.



Figure5: Mounting the battery in the direction of the arrow

6.5. Adjusting the light

Adjust the headlamp so that the light beam is not too high so that other drivers are not blinded. The headlamp should be adjusted so that the center of the beam illuminates the ground at a distance of 5 m from the headlamp.

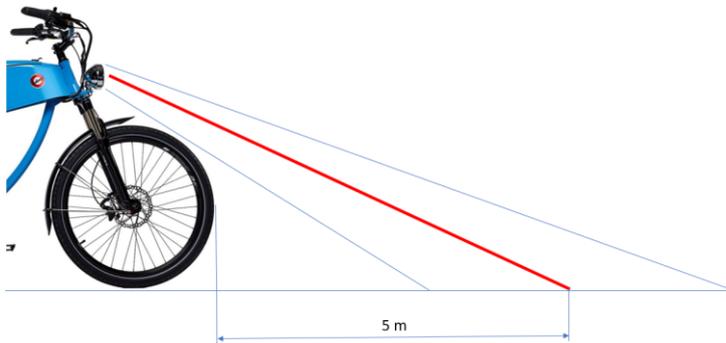


Figure 6: Adjusting the light

6.6. Assembling the pedals

The pedals are in a separate box. The pedals are labelled with a sticker. "L" means that the pedal is for the left side in the direction of travel. "R" is for the right side in the direction of travel. Use the accompanying tool to mount the pedals. The right pedal has a right-hand thread (tighten clockwise). The left pedal has a left-hand thread. (Tighten anti-clockwise)

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7. First Use

Mount the Lohner-Falkon® as according to chapter 6.

Charge the battery fully. (Chapter 8.8.2)



Fully charge the battery before first use. The charging time for a completely discharged battery is about 6 hours.

In the meantime, you can download the "LOHNER" app for your smartphone. This is available free of charge for Apple and Android devices in their respective stores.

Ensure that the main switch of the battery is set to "1". Otherwise switch on the main switch of the battery. You will find this on the rear side of the battery.



Figure7: Battery bottom left: Main switch middle: Battery ON Right: Battery OFF

7.1. Connecting with smartphone

Open the "LOHNER" app on your smartphone.

Now switch the battery ON by briefly pressing the Softtouch (Figure8) on the top of the battery.



Figure8: Top of the battery: Softtouch Button

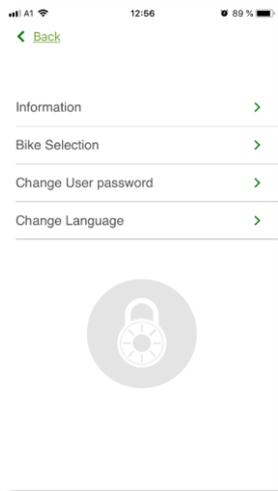


Figure 9: Settings

Now open the App Settings with a swipe to the right. Now you can click "Select bike". After clicking "Scan", the app will search for available bicycles in your immediate vicinity.

Note that the connection is established over "Bluetooth", which means that you must be in the immediate vicinity of the bike. Otherwise the connection may be broken or your bike will not be found.

Now all nearby bikes will be displayed. The default name is "Lohner 1" The following number may differ.

By clicking on the line / name of your bike, it will be assigned to your bike list.

For the first connection, use the standard PIN code(Figure12) supplied with this manual. Keep

this standard PIN code in a safe place, as this is the only code you can use to change your PIN code. Now choose a 6-digit user PIN code. You can use this PIN code to unlock your bike for daily use. If you lose your phone, you can use another mobile phone to unlock your bike with the same user PIN code.

Click on Remember PIN, if you would like to save your PIN code in the app. Then you don't have to enter it again.

An active connection is indicated by the symbol in the bike list. Inactive connections are indicated by the symbol in the bike list.

If you use your bike regularly the main battery switch can remain always on. Only during longer periods of inactivity, for example during winter, we recommend the battery to be switched off completely by means of the main switch. For this see chapter 8.8.

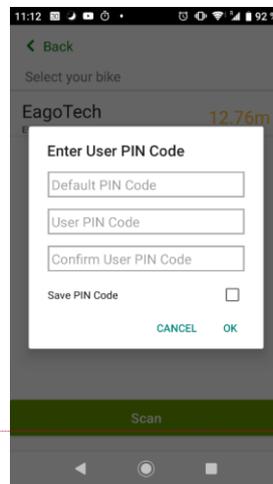


Figure 10: first connection

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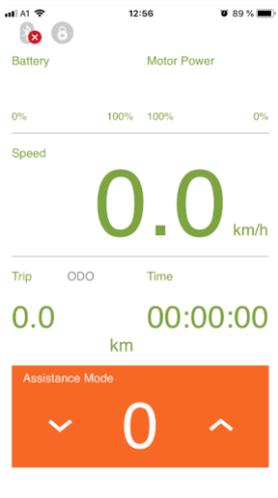


Figure 11: Speedometer

Make sure that your bike is assigned to an active connection.

With the button "Back" in the upper left corner you will leave the bike list.

Pressing the button "back" again brings you to the speedometer display.

The symbol  indicates that you have an active Bluetooth connection.

The symbol  means that you are not currently connected to the bike.

To receive electrical pedal support, the assistance level must be between 1 and 3.

Changing between km/h and miles/h is done by simply tapping on the corresponding field.

To reset the time or trip display, press and hold the corresponding field.



Figure12: Default PIN Code



Keep this standard PIN code (Figure12) in a safe place, as this is the only code you can use to change your PIN code.

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8. Daily Use

Your Lohner-Falkon® was assembled with great care and tested multiple times during production and during a final inspection. Because cables can stretch during transport or storage due to the material, screws and nuts can settle or other things can occur, for your own safety you must carry out the following inspections before the first ride:

- Mount side reflectors if your tire does not have a reflector ring
- Secure fit of the battery
- All cables are intact and securely fastened to the frame
- Ensure that all parts are fastened
- Safe brake function



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- Adequate tire pressure (max. pressure is indicated on each tire)
- Smooth motion of all bearings (bottom bracket, wheels, steering) and smooth wheel rotation

8.1. Overview and function of the components



Figure 13: Overview of the components of the Lohner-Falkon®

1 Throttle grip

The throttle grip is located on the right handlebar. Depending on the legal situation, your throttle grip is programmed either as a sliding aid up to 6 km/h or as a real throttle grip up to top speed. Make sure that the throttle grip is not already applied when turning it on.

2 Operating the suspension fork

With this switch you can switch off the suspension fork. Deactivate the suspension fork if, for example, you want to save power when riding uphill. You can see the status of the suspension fork directly on the fork itself. In Figure 14 you can see that the suspension fork is not locked in this case.



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Figure14: Suspension fork status

Your Lohner-Falkon® is equipped with a suspension fork to offer you more riding comfort. You can adjust the spring tension of the fork by turning the adjusting screw on the side (on the left when facing the front) of the fork bridge. (Figure15) Clockwise (+) will make the suspension firmer and counterclockwise (-) more comfortable.



Figure15: Hardness of the suspension fork - In the direction of the arrow it will get tighter

3 Steering bearings adjustment screw

Leave this setting to a professional. This screw adjusts the steering bearing clearance of the front fork. A clockwise rotation means more tension, a counterclockwise rotation means less tension.

4 Handlebar retaining screws

It is described in detail how to adjust these screws in chapter 6.3.

5 Headlight



The front headlight is a LED headlight, please adjust this according to chapter 6.5. The light turns itself on (daytime riding light)

6 USB connection

This USB connection is only for charging your smartphone. The power supply is 6V/1.5A. The charging socket is attached to the underside of the wheel by means of a velcro fastener. Always make sure that the dust protection cap is always firmly in place on the cable when you are not using the cable.

7 Hydraulic disk brakes

Your bike is equipped with high-quality hydraulic disk brakes.

8 Tires

The tires contain a white reflector ring, so there is no need to use a separate reflector in the spokes (attention: national laws may differ)

9 Bottom bracket bearing

Your bike is equipped with a pedal sensor on the bottom bracket, which depending on the applied torque supports the propulsion aliquot.

10 Motor

Your wheel has either a 250 W or 500 W wheel hub motor installed. When the brakes are applied, this motor returns the braking energy back into the bike.

11 Gear switching

Your bike is equipped with an 8-speed gearbox.

12 Footrests

The footrests (Figure16) must be used by the passenger. If the passenger's leg length is not sufficient, this person may not ride on the vehicle. The feet must rest fully on the footrests. Contact by only the tips of the toes is not permitted.

13 Battery

You can find out how to insert the battery in chapter 6.4. Special instructions for battery use are provided in chapter 8.8.

14 Taillight

Your rear light switches on automatically (daytime riding light). It is possible that your rear light may remain lit for some time after you turn it off, this is normal.

15 Hand grips for the passenger

The handgrips (Figure16) must be used by the passenger.

16 Saddle



The saddle folds backwards and is held in place by a magnetic fastener.

17 Storage compartment

The storage compartment (Figure16) is splash-resistant, not waterproof. Therefore, do not store any important documents in it.



Figure16: Left: Storage compartment in the middle: Right footrest: Hand grip

8.2. Switching on procedure

Make sure that your smartphone is switched on and the LOHNER app is running. Now switch ON your bike by briefly pressing the Softtouch (Figure8) on the top of the battery. Depending on whether you have activated the option Remember PIN code, a PIN code prompt will appear during connection setup.

Connection to your smartphone occurs automatically. You know that the bike is ready for operation by the headlight that is on.

8.3. Switching off procedure

Press the Softtouch Button (Figure8) for at least 2 seconds. The switching off procedure will be initiated. The SOC indicator of the battery will blink 3 times, then the battery will turn off. The bicycle lights will also turn off.

Now you can close the app on your smartphone.

The switching off procedure is not possible when the bike is locked.

8.4. Automatic switching off

To save energy, your battery will automatically switch off after 30 minutes of inactivity. This automatic switch-off is only prevented if you have activated the lock function (according to chapter 8.5).

Your smartphone will lose the Bluetooth connection and will show this with the  icon.

If the battery is empty, an automatic switch-off can be initiated within 30 minutes, even if the shut-off function is active.



8.5. Locking function of the bike

To protect your bike from unauthorized use, you can lock your bike electronically. In this case, the motor is actively energized against the attempted direction of movement. This results in clicking noises, which are completely normal. This lock only affects the rear wheel.



Riding away is made more difficult, but this locking function is not an anti-theft device! We recommend protecting the bike from theft with a lock.

With this function your bike remains running (noticeable as the headlights switched on), and therefore the battery can drain, because the complete system continues to actively work. If the battery is completely drained, or is inactive for 30 minutes, automatic switch-off is initiated to protect the battery.

If the automatic shut-off is activated due to a weak battery, or if you switch the battery off yourself, the locking function will be inactive, and the bike can be moved! However, the locking function becomes active again when the unit is switched on again. This function prevents the motor support from being activated by unauthorized persons.

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To activate this function, swipe from the left side of the screen. Now you can click on the large lock symbol  in the lower part of the screen in the options menu. Now the lock will turn red which indicates that the lock is active. In addition, you can also see the symbol  in the status bar of your app.



To disable this function, swipe from the left side of the screen. Now you can click on the large lock symbol  in the lower part of the screen in the options menu. Depending on whether you have activated the "Remember PIN code" option, you will now be asked for your PIN code. If the prompt is successful, the lock will turn green which indicates that the lock has been deactivated. In addition, you can also see the symbol  in the status bar of your app.



8.6. Speedometer functions

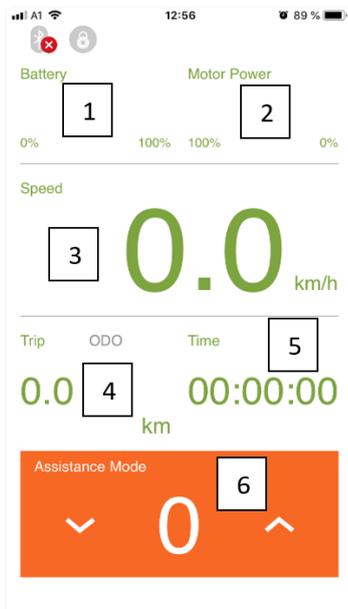


Figure 17: Speedometer functions

1 Battery indicator:



The battery bar is green if the battery has an energy level above 75%.



Between 25% and 74% energy content, the bar is orange.



If the charge level is between 10 % and 24 %, the battery indicator turns red



If the charge level drops below 9%, the battery indicator is red and also flashes.

2 Motor power:



The current motor power is displayed. Here you can monitor your riding performance. If the display remains in the green zone (right), you are not consuming much energy and can achieve a longer range. However, if you often see the maximum range (left), the range will be

shortened accordingly.

3 Speed:

The current riding speed is displayed. By briefly tapping on this segment, you can change the display between km/h and miles/h.

4 Toggling Trip/ ODO:

Trip is a daily distance counter. ODO records the total kilometers ridden. Toggling between ODO and Trip is done by briefly tapping on this segment. If you want to reset the trip meter, you must press this segment for at least 2 seconds. The reset occurs without further confirmation.

5 Time function:

The ride time is recorded. The stopwatch starts automatically as soon as you start riding. At 0 km/h the stopwatch stops. Thus, pause times are not counted. To reset the stopwatch, press the segment for at least 2 seconds. The reset occurs without further confirmation.

6 Support level:

Your Lohner - Falcon® is equipped with 5 riding modes (of which 3 are support levels). You can change these with the arrow keys. The availability of the throttle grip is subject to national laws. If this is not permitted in your region, the throttle grip is programmed as a pushing aid and is



therefore limited to 6 km/h. If the throttle grip is not subject to any legal restrictions, you can ride up to top speed. The step sensor and throttle grip serve as parallel signal sources. The motor support is always set according to the higher input signal.

-1	Permanent recuperation: The throttle grip and pedal support are deactivated. The motor is permanently switched to generator mode and charges the battery. Select this mode for longer downhill rides. If the battery is in a state of charge that does not permit further charging, this support level cannot be selected and is refused with a "battery fully charged" warning. Instead, it will switch to support level 0.
0	No pedal support: The pedal support is deactivated. However, the throttle grip is activated. There is no support for normal pedaling. Use this mode if you want to cycle normally.
1	Support level 1: The pedal support and throttle grip are activated. The pedal support is limited to 30% of the total power. Use this mode if you want to drive with low power consumption. - Battery saving mode.
2	Support level 2: The pedal support and throttle grip are activated. The pedal support is limited to 60% of the total power. This mode is a good compromise between performance and range.
3	Support level 3: The pedal support and throttle grip are activated. The pedal support is not limited. Use this mode if the range is not so important to you. This is a fast way to get from A to B.
The throttle grip, if it is not used as a pushing aid, always supports 100% of the available total power. Note that excessive use of the throttle grip will affect the range.	



8.7. Settings

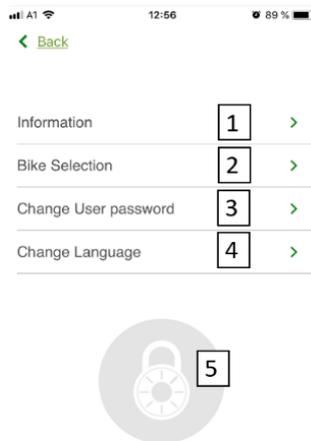


Figure 18: Main menu

The settings can be activated with a swipe from the left.

1 Information:

All software versions of the individual devices and the number of charging cycles are displayed here.

2 Bike Selection:

Here you can see a list with the available Lohner-Falkons®. Here you can add, remove and rename the Lohner-Falkons®.

3 Changing the PIN code:

Here you can change your PIN code. For this you will always need the original PIN code, which you received with the factory delivery.

4 Language selection:

Select your preferred language. At the time of this writing, you can choose between English, French, German, Spanish and Italian. The language is changed immediately. There is

no need to restart the app.

5 Locking function of the bike:

This function was described in chapter 8.5. By pressing the symbol, you switch between the locking and riding modes.

8.8. Battery

The battery is equipped with technology that reduces the input surge current by means of a soft start. In addition, the battery is equipped with short circuit detection and prevents switching on under these conditions. In addition, the built-in Li-Ion cells are actively balanced during the charging process. The electronics for monitoring these functions (called BMS) can supply the battery pack for several months without charging. Upon first delivery, the battery charge will be between 10% and 30%. Please fully charge the battery before first use.



You also must charge your battery to at least 80% every 6 months.

If your drive system switches off automatically because the battery is weak, you must charge the battery within 4 weeks, otherwise the battery could become damaged which is not covered by the warranty.



After a deep discharge, charge the battery within 4 weeks! Otherwise irreparable damage may occur.



Do not operate the battery above 60°C. (summer, direct sunlight)

Operating temperature:

The operating temperature should be between **-10 °C and 60 °C**.

Storing the battery:

If the battery will not be used for an extended period of time, remove it from the bike and store it separately at room temperature in a fully charged state. If the battery is to be stored for a longer period of time, it must be in a charged state. The storage temperature should be between **0°C and 40°C**. Ensure dry storage.

8.8.1. Control elements

In Figure7 you can see the main switch with its switch positions. You can find the switch on the underside of the battery. In addition, there is a Softtouch Button (Figure8) and the SOC display directly next to the Softtouch Button. The charging socket is located on the underside of the battery (Figure22).

Main

switch

In order to use your bike, this switch must be set to "1". If you are planning a longer period of inactivity, for example in winter, we recommend that you set the switch to "0". (Figure7) We recommend leaving the main switch set to "1" during summer (or regular use).

Button (Softtouch Button)

A brief button press will activate the battery pack if the main switch is set to "1". This is visually represented by a moving light from left to right. The LED's will turn off after a short time. Use the button for daily use.

A long press (3 seconds) will switch off the battery pack. This is visually indicated by all LEDs flashing.

LED display / SOC display

When the battery is switched on, the charge status of the battery can also be read. SOC means "State Of Charge", which refers to the state of charge of the battery.

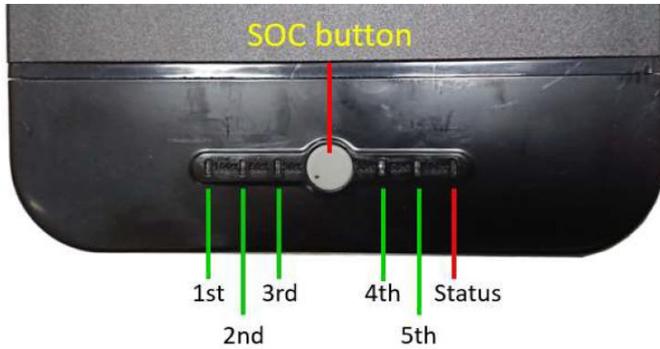


Figure 19: LED Status

LEDs 1 – 5	illuminate:	over 90% charge state
LED 1 – 4	illuminate:	70% - 90%
LED 1 – 3	illuminate:	50% - 70%
LED 1 – 2	illuminate:	30% - 50%
LED 1	illuminates:	10 % - 30 %
LED 1	flashes:	less than 10%

8.8.2. Charging the battery

Charger designation:

HP0180WL4(3A) 48V3A

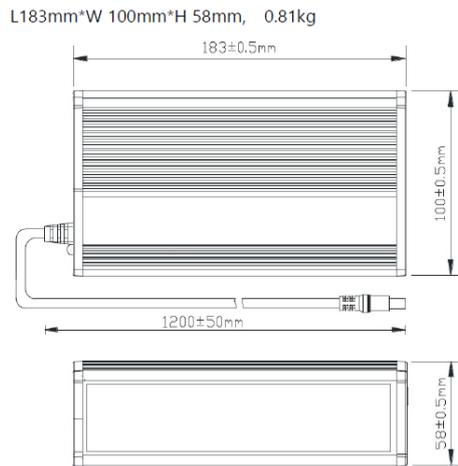


Figure 20: Charger display



Only use the original charger, otherwise you risk serious damage that could result in fire. The charger has various safety mechanisms. If a malfunction is detected, this is indicated by the corresponding LED indicator.

Overview of the safety functions:

- Short circuit detection at the battery outlet - charging stops - LEDs flashes red
- Overvoltage protection - charging stops - LED flashes red
- Low voltage protection - charging stops - LED flashes red
- Over current protection - charging stops - LED flashes red
- Does not start if the battery voltage is in an undefined state (deep discharge battery)
- Time lapse - charging stops with time lapse - LED flashes red

The charger has an LED indicator:

- Switched on: Red
- Charging: Orange
- Fully charged: Green
- Error: Flashing red

Ensure the following battery charging conditions:

- Humidity: 20% - 85% relative humidity
- Temperature: 0°C – 40°C
- Power supply: AC 100 ~ 240 V 50/60Hz



The charger is intended for indoor application only.
You must remove the battery from the bike to charge it.

Observe the number of charging cycles:

The number of charging cycles can be seen in the app in the "Information" menu.
Figure23Figure23



Figure21: Battery charger connector

Charging process:

To charge, plug the charger into an electrical outlet. Remove the battery from the vehicle. Open the dust cap (Figure21) on the battery. Connect the charging socket (Figure22) to the battery. The charging will start automatically (LED lights orange) and end automatically. A green LED on the charger indicates that the charging is complete. A full charge takes about 6 hours. If you want to charge a battery again, you have to disconnect the charger from the electrical outlet until the LED goes out. Then start the process from the beginning.

If it is necessary, you may stop the charging at any time. For this you only have to unplug the charger from the battery.

PIN	2PIN
1	Output (+)
2	Output (-)

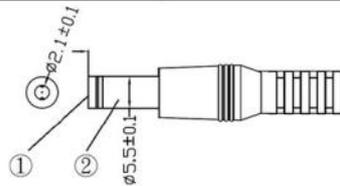


Figure22: Charging socket

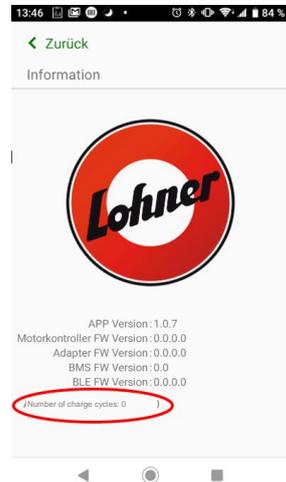


Figure23: Information from the app

Range:

The range of a fully charged battery system can be strongly affected by various factors such as the support mode you choose, your physical performance, shifting behavior, body weight and carrying load, tire pressure, road surface, topography, temperature, and whether you are making city trips with frequent starts or overland trips with long level stretches.

9. Maintenance and Upkeep

Before carrying out any maintenance work, make sure that the bicycle is switched off and the battery has been removed!

Improper maintenance of the Lohner-Falkon® can cause damage to components. The result can be a crash!

Do not carry out any maintenance on the electric drive system, as this will invalidate the warranty.

The motor may start to move unintentionally if the drive system remains switched on during cleaning or similar work on the Lohner-Falkon®.



Do not perform any work on the electrical components (battery, motor, sensor, ...) of your Lohner-Falkon® and the supplied charger. This could lead to danger (fire hazard, disabling of safety devices, ...) to yourself, others, or the environment!

Use only original replacement parts to guarantee proper function.

The electric drive is maintenance-free when used properly and with care!

9.1. Before each ride

Before using the Lohner-Falkon® always carry out a quick visual and functionality check. Check



- The tire pressure
- The light functionality
- If all necessary reflectors and reflectors are available
- The brakes
- Presence and function of the bell
- There must be no loose components
- Other obvious defects

If you have any doubts about the proper condition of your bicycle, do not ride it. Contact your service partner.

9.2. Periodic inspection

Every 1000 km or at least after one year, a safety inspection should be performed by a specialist. Wear parts may have to be replaced even earlier! The following parts must be checked: Brake levers, brake calipers, brake pads, lighting (function), reflectors (presence), steering bearings (clearance), chain elongation, the oiling and lubrication of components.

Every 500 km the brake pads must be checked for wear (visual check) and replaced if necessary. The wear of the brake pads depends on the operating conditions.

After some time, screws (including the screw couplings of the spokes), nuts and fastening parts settle, shift cables and brake cables stretch as a result of load and vibration. We therefore recommend that these parts be checked regularly for tightness and tightened if necessary.

9.3. Brakes

With your Lohner-Falkon® the left brake lever is the front brake and the right brake lever the rear brake. The brake pads must be checked for wear **every 500 km**. Check if the brakes are working properly before each journey. Brake pads and brake disks that are wet, dirty, smeared or penetrated by cleaning agents will have poor braking performance!



Make sure that the brakes are working properly before each ride. If you notice any malfunctions before or during riding, either do not start riding or stop riding. Have the repair of the brake system done by a specialist.

9.4. Chain

Be sure that the chain is always well lubricated. Use chain spray from your dealer and use it according to the instructions from the manufacturer. The chain should be checked at least every 1000 km for its wear limit (the elongation of the chain) and replaced if necessary.

9.5. Tires

It is important that you ride with optimum tire pressure, because good road traction depends on this. It also reduces wear and tear.



Before riding, check that there is enough air in the tires. The maximum pressure indicated on the tires must not be exceeded!



Recommended tire pressure:

Load capacity [kg]	40 – 110	111 – 150
Pressure [bar]	3.5 – 4.0	4.0 – 4.5
Pressure [PSI]	50.8 - 58	58 – 65.2
Pressure [kPa]	350 – 400	400 – 450

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9.6. Adjusting the circuit

Even if the derailleur is working properly, all moving parts of the derailleur and the chain roller bearings must be lubricated from time to time. If the gears on your bike are not working properly, it may be necessary to adjust them. **An adjustment necessary for this reason is not covered by the manufacturer's warranty!**

Figure24 shows the shift lever on the handlebar. 1 is the lowest gear, 8 the highest. Use the first gear for starting off and going uphill. If the gear shift does not shift exactly you can remedy the situation:

The rear derailleur sprockets ⁴ (Figure25) must be located exactly below the respective sprocket ² of the selected gear. This can be adjusted by means of the swivel limit screws ¹ (Figure25) on the rear derailleur. If the chain skips over the larger sprocket, the swivel limit screw L ⁵ must be adjusted so that the chain can still climb over the largest sprocket, but not beyond it. On the other hand, if the chain drops down from the smallest sprocket, adjust the swing limiting screw H ³ so that the chain guide roller is perpendicular to the smallest sprocket.

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Figure24: Selector lever gearshift

The gearshift cables must be maintained regularly. The cables stretch out over time, which can be corrected with the appropriate adjustment screws Figure26. To do this, the adjusting screw ⁶/₇ has to be pulled back and turned. Turning it counterclockwise loosens the cable, turning it clockwise tightens it.



Figure25: Adjustment screws on the derailleur

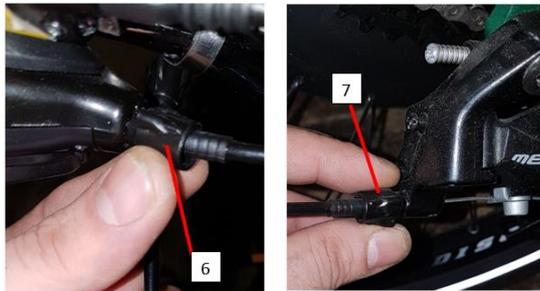


Figure26: Adjusting screws for cable length

9.7. Bottom bracket bearing

Since your bicycle is equipped with a sensory inner bearing (Figure27), it must be replaced by a specialist workshop authorized by the manufacturer or distributor. Otherwise, there is a risk of damaging the cable when the bottom bracket is opened.



Figure27: Sensory inner bearing

9.8. Removal and installation of the rear wheel

In the event of tire damage, you must remove the rear wheel. Proceed according to Figure28: First make sure that the battery has been removed from the bike. Now open the connecting



cable to the motor^[1]. Now the nut^[4] on the left and right can be removed. Pay attention to the anti-rotation guard^[3] which supports the motor on the frame^[2].

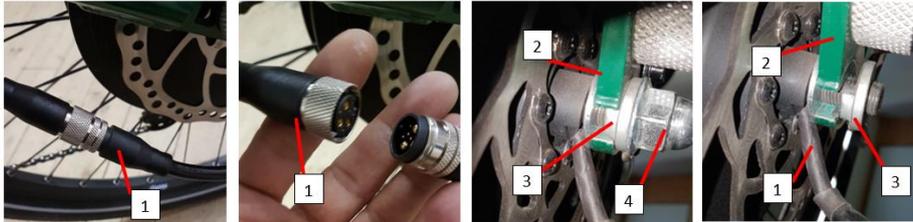


Figure28: Removal of the rear wheel

When installing the wheel, reverse the procedure. Slide the wheel into the dropout of the frame^[2]. Mount the anti-rotation device^[3] exactly according to Figure28.



In particular, install the anti-rotation device^[3] exactly according to the instructions, otherwise serious damage may occur to your bicycle.

Ensure that the rear wheel can rotate freely and is mounted nicely parallel in the frame. Now you can put the nut^[4] back in place. Both wheel nuts must be tightened with a torque of **45 Nm +/- 5 Nm**. Mount the motor cable to the frame in such a way that there is no risk of collision between the cable and the brake disk at any time. Use commercially available cable ties for this purpose. Remove the excess length of the cable ties after installation.



If in doubt, consult a specialist workshop and do not replace the rear wheel yourself.

9.9. Removal and installation of the front wheel

Proceed according to chapter 6.2.

9.10. Wear parts



Wear parts are the parts of the bicycle that are subject to a certain degree of deterioration due to their function and are therefore not covered by the guarantee or warranty.

Lights and reflectors

Defective lights must be replaced. LED headlights and LED taillights are designed so that the bulb cannot be changed. Therefore, it is necessary to change the complete lamp.

Moving parts

Frame bearings, suspension forks etc. can wear out from use.

Brake

The brake pads of disk brakes are subject to wear due to their function. Regular inspection is essential and they must be replaced if they do not function properly.

Pads



Chain

Since the chain will lengthen over time, it must be replaced when the wear limit is reached. Have the chain checked regularly by a specialist.

Tires and tubes

Due to their function, bicycle tires and tubes undergo wear that is strongly determined by the user. Sharp braking, that causes the wheel to lock, considerably shortens tire life. Make sure that you always have a sufficient tread depth.

Sprockets, chain rings, shift rollers

Like bicycle chains, sprockets, chain rings and shift rollers are subject to functional wear. Here the life span can be extended by the correct care, but in the case of wearing out a replacement is necessary.

Spokes

A firm fit and tight tension of the spokes are crucial for the smoothness and stability of the wheel. Loose spokes must be tightened, cracked spokes must be replaced immediately. It is normal for the spokes to loosen as a result of use.

10. Cleaning the Bike

The Lohner-Falkon® and the components of the drive system should be cleaned with a soft cloth and commercially available neutral cleaners or soapy water. Cleaning with solvents such as petrol, trichloroethylene, etc. and cleaning agents that are too alkaline is strongly discouraged, as they take away the gloss of the paint.

In general, you should oil all gear components such as chain, gears and their bearings after washing the wheel. Use suitable oils from a specialized dealer.



Never use a high-pressure cleaner. This can destroy the bearings and electronics.

10.1. Saddle

Artificial leather saddles should be cared for at regular intervals with special care products. When leather saddles get wet, the drying process must not be accelerated by adding heat.

11. Disposal and Recycling

Electrical and electronic equipment, such as batteries and accumulators, must not be disposed of with household waste. The end user is legally obliged to dispose of electrical and electronic equipment at the end of its service life at the public collection points provided for this purpose or to return it to the specialist dealer. With the recycling, the material recycling or other forms of the utilization of old devices you make an important contribution to the protection of our environment.

The components must be disposed of in accordance with the environmental regulations applicable in your own country.



For advice on recycling, contact your local authority or specialist dealer.





12. Troubleshooting

If any malfunctions occur during operation, they will be indicated via the app by an exclamation mark in the task bar. Tap on the exclamation mark and remove the error message:

Error messages from the motor controller:

Error message	Action
Hardware error	Turn off your bike and remove the battery. Consult your service partner.
Battery overcurrent	The motor controller detects a current consumption that is greater than that permitted by the battery. Turn off your bike and remove the battery. Consult your service partner. Turn off your bike and remove the battery. Consult your service partner.
Phase current too high	The motor is consuming more power than it should. Turn off your bike and remove the battery. Consult your service partner.
Battery overvoltage	The motor controller detects that the battery voltage is too high. Turn off your bike and remove the battery. Consult your service partner.
Error with the hall sensor	Check the motor cable, the screw cap may not be completely closed. Tighten the cable connection lock by hand and restart the system.
Motor rotation error	This error may occur if you accelerate but the motor cannot rotate. E.g. you put your feet down and then try to accelerate. Let up and then restart the system.
Torque sensor above/below limit	Check the cable connection to the torque sensor. If this is unplugged, re-connect and restart the system.
Throttle grip above/below limit	Check the cable connection to the throttle grip. If this is unplugged, re-connect and restart the system.
Motor too hot	Let the motor cool down.
Low voltage	Battery is depleted. You should charge the battery.
Error during recuperation	The recuperation did not work. Consult your service partner. Turn off your bike and remove the battery. Consult your service partner.
Pedal crank overspeed	The torque sensor is delivering incorrect values. Restart your system and try again. If the error message appears again, check the cable connection. If this is correct, contact your service partner.
No communication with the battery	No communication can be established with the battery. Make sure you are using original replacement parts. Contact your service partner.
BMS error	General battery error. Turn off your bike and remove the battery. Consult your service partner.



Battery error message:

Error message	Action
Current consumption is too high	The battery detects too high a current consumption. Check whether there is a short circuit. Check that all cable connections are intact. If the error message persists, switch off your bicycle and remove the battery. Consult your service partner.
Battery short circuit	Turn off your bike and remove the battery. Consult your service partner.
BMS overvoltage	Check the motor cable, the screw cap may not be completely closed. Tighten the cable connection lock by hand and restart the system.
BMS low voltage	Battery is deeply discharged.
Insufficient battery temperature	It is too cold for the battery. Battery operation is possible from -10°C to 60°C.

Troubleshooting without error message:

Error description	Action
Bicycle "clicks" while trying to pedal. There is no support available.	The locking function is activated. Deactivate the locking function according to chapter 8.5
You feel a lot of resistance when pedaling.	Drive mode "-1" is selected. Switch to another drive mode. See Chapter: 8.6
You have no pedal support.	Drive mode "0" is selected. Switch to another drive mode. See Chapter: 8.6
The pedal support starts with a delay.	The torque sensor in the bottom bracket detects the left pedal first. Start with the left foot to solve this problem.
The throttle is not working.	Switch to another drive mode. The throttle grip is not supported in every drive mode. See Chapter: 8.6
The bicycle shows no function.	Switch off the battery using the Softtouch Button (Figure8) from (chapter 8.3). The problem can be solved by switching it on again with the Softtouch Button (chapter 8.2). Be sure that the battery is switched off when you insert it into the bicycle.

13. Service

The service is

1. Self Service: With the help of this manual you will be able to perform repairs and replace wearing parts yourself. The parts are commercial goods and can be purchased from retailers. If you are not sure about the definition of the part, contact Lohnerwerke.
2. Bicycle repair service: If you are not sure how something can be repaired (or serviced) or if the manual explicitly specifies that it must be performed by a bicycle repair shop,



we kindly ask you to visit a shop near you and to have it repaired. If the service location has technical questions, it can contact Lohnerwerke for support at any time.

3. Bring-In-Service. If the specialist dealer is not able to perform the service, please contact Lohnerwerke. We will run remote diagnostics beforehand. In the worst case, we will pick-up, repair and return your Lohner-Falkon® for a fee.

Responsible for warranty claims:

Lohnerwerke GmbH & Co KG
Porzellangasse 2/24
1090 Vienna
Austria
kontakt@lohner.at
<http://www.lohner.at>
+43 1 319 0223

Service partner (only bring-In, or pick-up for a fee):

blackTEC e.U.
Defregergasse 12
4050 Traun
Austria
office@blacktec.at
+43 720 3494691
Business hours: Mon. - Thurs. 8:00 am - 4:00 pm Fri. 8:00 am - 12:00 pm

14. Warranty

The company Lohnerwerke GmbH & Co. KG provide the following services in the context of the statutory warranty obligation in the event of a defect occurring in our product to the direct customer of our product:

Remedying defects which occur due to material or manufacturing defects by means of repair or replacement of the affected part in accordance with the statutory warranty regulations within a period of 24 months from the date of manufacture to the direct customer. Wear parts are excluded. This applies to the battery if, during normal use, it does not reach 60 % of the output capacity within the time limit or alternatively, after 500 charging cycles, or does not reach more than 40 % of the output capacity after 700 charging cycles.

In any case, the instructions must be observed.



15. Declaration of Conformity

EG - DECLARATION OF CONFORMITY

DECLARATION of CONFORMITY

The
company Lohnerwerke GmbH & Co KG
Porzellangasse 2/24, 1090 Vienna

declares that the e-bike
Lohner-Falkon

complies with all relevant provisions of the following directives and standards:

- EG Directive 2006/42/EC — Machinery Directive
- EC Directive 2014/35/EU — Low Voltage Directive
- EC Directive 2014/30/EU — Directive on electromagnetic compatibility
- EC Directive 2011/65/EU — Guideline to the restriction of the use of certain hazardous substances in electrical and electronic equipment

Conforms to the provisions of the following harmonized standards as amended:

- EN ISO 12100 (Safety of machinery - General designing principles) - Risk assessment and risk mitigation
- EN ISO 4210-1 Bicycles - Safety requirements for bicycles - Part 1: Terms
- EN 60335-2-29 Safety of household and similar electrical appliances - Part 2-29: Particular requirements for battery chargers

Authorized person authorized to compile the technical documentation:

Mr. Andreas Lohner
Company Lohnerwerke GmbH & Co KG, Porzellangasse 2/24, 1090 Vienna

Vienna 10/01/2019

[SIGNATURE]

Mag Andreas Lohner, GL



16. Notes

Glue receipt / date of purchase here:

A large, empty rectangular box with rounded corners and a dashed black border, intended for pasting a receipt or purchase date.

Note the key number here:

A horizontal, empty rectangular box with rounded corners and a dashed black border, intended for writing the key number.

Note the frame number here:

A horizontal, empty rectangular box with rounded corners and a dashed black border, intended for writing the frame number.

Make a note of the key numbers and the serial number of the frame. They are unique, individual numbers by which the design can be uniquely identified (e.g. in case of loss of the code or questions at the specialist dealer, etc.).

The frame number can be found on the sticker on the down tube and as a copy inside the lid. The key numbers are attached to the key ring as tags.