

Tomos E-Cargo User manual



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1 About this manual





First of all, thanks for choosing Tomos E-Cargo

Tomos E-Cargo , we have reinvented the transport bicycle: afresh new design, lightweight, safe and comfortable materials together with the powerful and reliable electric pedal assist and A-brand components (e.g. SHIMANO, Schwalbe, ANANDA).

This model is designed for families with young children who want a green, affordable and also time saving alternative to owning a (second) car.

This manual will help you learn everything you need to know about your Tomos E-Cargo. It explains how to ride and operate the bike and how to perform basic maintenance tasks. It is strongly recommended to read it in full.

Used symbols

	Warning	Indicates a hazardous situation that, if not avoided, could result in serious or fatal injury and/or serious damage to a product or surrounding.
	Caution	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury and/or damage to a product or surrounding.
	Note	Information that should be considered important, but is not injury or damage related.
	Tip	Useful information.

Copyright and disclaimer

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Nothing herein may be considered as an additional warranty. Tomos E-Cargo is not liable for technical or other errors in or omissions from this material.

Tomos E-Cargo is continuously improving its product range to bring you a better and safer riding experience. It might be possible that

some features in this manual are different from the bike as you have bought. Check the most recent information on

Warranty

Tomos E-Cargo guarantees that this product has been manufactured according to the latest European safety standards and quality requirements applicable to this type of product and that this product, at the time of purchase, has no defects in workmanship and material. During production various quality checks have been performed. Should it happen that, despite all our efforts, during our warranty period(s) your Tomos E-Cargo shows a material and/ or manufacturing fault (with normal use as described in the manual), then Tomos E-Cargo is required to respect this warranty. If you feel your warranty should be applied or if you want detailed information on the application of your warranty please contact your Tomos E-Cargo dealer.

The following warranty stipulations apply to your Tomos E-Cargo*. All terms are applicable counting from date of purchase.

- A five year warranty on the frame and the fork except for wear parts.
- A two year warranty on the paint and on visible rust from the inside.
- A two year warranty on all other parts. Wear parts such as the tyres, the chain, the pedals, bearings, the safety belts, ballends, etc. are exempt from this warranty.

- A two year guarantee on the battery. The capacity of the battery will decrease depending on the number of charge cycles and battery life. This decrease in capacity is not covered by the warranty.
- During the valid warranty period(s) all parts where Tomos E-Cargo has determined that there is a construction or a material defect, will be repaired or reimbursed at Tomos E-Cargo's discretion.
- The factory warranty can only be claimed upon presentation of the original purchase invoice.

* The warranty stipulations are applicable only by the first owner.

Your warranty will be voided or will not be applicable in case your Tomos E-Cargo (and/or its parts):

- Has been altered in its construction.
Never make any modifications to your electrical drive unit or fit any other products which would be suitable for increasing the performance of your e-bike.
- Has seen insufficient maintenance (for sufficient maintenance please follow the service plan as described in chapter 11).
- Has been misused or has been involved in an accident.
- Has defects following normal wear.
- Has been damaged during transport.
- Has been damaged through mounting accessories (such as bags) not sold or produced by Tomos E-Cargo.
- Has been used differently than the product is intended for.

- Has continued to be used despite damage and/or defects have been found, and this made the damage worse.
- Has not been maintained/serviced by a registered Tomos E-Cargo dealer.



Only a qualified bike dealer should perform any necessary work on the gear hub and grip shifter. Unauthorized work on any of these parts could endanger you, and your warranty may become void.

Claiming warranty:

- Complaints and warranty claims will be dealt with by your Tomos E-Cargo dealer. In the event of complaints or questions about the warranty, your Tomos E-Cargo dealer will always be your first point of contact, since this is where the contract of sale was concluded. Tomos E-Cargo will then make a definitive assessment on whether the warranty applies. The dealer must send the part in question, together with the purchase invoice, to Tomos E-Cargo, stating the complaint.
- Your dealer may charge you for any assembly or dismantling costs.
- Your dealer may charge you for the transport charges associated with getting the bicycle and/or parts from your dealer to Tomos E-Cargo.

Liability

A claim honored by Tomos E-Cargo under these warranty terms and conditions does not constitute any admission of liability on the part of Tomos E-Cargo for any loss or damage suffered by the owner or third parties. Any liability on the part of Tomos E-Cargo for consequential damage is hereby excluded. The liability of Tomos E-Cargo is limited to whatever is set out in the warranty terms and conditions, unless otherwise arising from a mandatory legal provision.

Disclaimer

Tomos E-Cargo has taken great care in compiling these warranty terms and conditions. But liability as a consequence of printing or typographical errors is excluded.

Assistance




In case you need help or have any questions regarding your Tomos E-Cargo please contact your local Tomos E-Cargo dealer.

For more Tomos E-Cargo information, technical information and news items please check our website and our social media

2 The Tomos E-Cargo

The Tomos E-Cargo Family bike is an e-bike. The bike is intended to be used on a regular paved surface and the tires are intended to maintain ground contact. The bike contains an electrical drive unit that assists you up to a speed of 25 km/h when riding. As soon as you push on the pedals the assistance is switched on and it switches off as soon as you stop pedalling or when you have reached a speed of 25 km/h. The bike can also be ridden as a normal bicycle (no assistance) and has a push assistance mode in which the e-bike can be pushed at low speed without pedalling.


Your Tomos E-Cargo bike comes with a bench mounted inside the box and two sets of safety belts. This bench provides enough room for **four** young children. The bench will also fit one adult. Adults will not be able to use the safety belts.


-  Check the local regulations to learn about possible restriction with regard to transport of passengers on a bike.
-  Check the local regulations on registering and using e-bikes on public roads.
-  For handicapped persons it is possible to mount a custom seat or bench inside the box. Please refer to your TOMOS E-Cargo dealer for more information.

Tip The bench can be removed and refitted depending on your cargo space requirements. Check with your Tomos E-Cargo dealer for advice.

Important technical specifications of the e-bike	
Total length	220 cm
Height	Max. 120 cm (depending on handlebar height the e-bike can be less high)
Width box / handlebar	69 cm / 73 cm
Weight of the empty e-bike	63 kg
Max. combined weight	230 kg
Max. rider weight	125 kg

The A-weighted emission sound pressure level at the driver ears is less than 70 dB(A).

 Never overload your e-bike. This has a negative impact on the steering and braking behaviour of the e-bike which may lead to accidents. For damage caused by bike overload any warranty claims shall be invalid.

 The e-bike can be used within a temperature range between -5 °C and 40 °C.

The e-bike and its parts

The Tomos E-Cargo Family e-bike comes in a number of versions. Your bike has either:

- Hyd Disc brakes
- A removable display or a non-removable ANANDA D16 display
- A grip shifter

Apart from these options, the type of motor and the capacity of the battery, all Tomos E-Cargo e-bikes are technically identical.

The e-bike contains the following parts:



Image 1: General overview (side view)

Image 1: General overview (side view)

1.	Mddp Box
2.	Front light
3.	Axle nut
4.	Front wheel
5.	Fender
6.	pedals
7	Pedal crank arms
8.	Sprockets
9.	Rear fork
10.	Pad
11.	Tire
12.	Rear light
13.	Rear fender
14.	Saddle
15.	Disc brake



Image 2: General overview (side view)

Image2: General overview (side view)	
1	Canopy poles
2	handlebar
3	ANANDA display
4	seat post quick release



80 gear barrel adjuster

Image 3: Handlebar with ANANDA display and gearshifter with gear indicator

3 Safety

Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. Save all safety warnings and instructions for future reference.



Warning

- When you cycle with a damaged front fork it can cause the front fork to break during riding. This may lead to loss of control of the bike. Always have your bike checked by your Tomos E-Cargo dealer in case the front fork of your bike was hit or your bike ran into an object with the front wheel.
 - Children may only use the e-bike and all its components undersupervision or after having been instructed by a responsible person. Otherwise, there is danger of operating errors and injuries.
 - Supervise children during use, cleaning and maintenance of the bike. Don't let children play with the charger. Keep the battery out of reach of children. Risk of electrical shock.
 - Do not open the electrical drive unit yourself. Opening of the electrical drive unit can cause leakage of water into the drive unit, which may lead to malfunctioning of the electrical drive unit. The electrical drive unit must be repaired only by qualified experts and only with original spare parts. This will ensure that the safety of the electrical drive unit is maintained. Unauthorized opening of the electrical drive unit will void warranty claims.
- Never make any modifications to your electrical drive unit or fit any other products which would be suitable for increasing the performance of your e-bike. This normally reduces the lifetime of the system and risks damage to the electrical drive unit and the bike. If you handle the system improperly you also endanger your safety and that of other road users, thus run the risk of high personal liability costs and possibly even criminal prosecution in the event of accidents attributable to manipulation. There is also a risk you lose the guarantee and warranty claims on the bike you have purchased.
 - Always use original Tomos batteries approved by your Tomos E-Cargo dealer. When you use other batteries, Tomos E-Cargo shall not assume any liability and warranty. The use of incorrect batteries can cause short circuiting and/or overheating which may lead to injuries and pose a fire hazard.
 - Use the battery only together with e-bikes that have an original Tomos electrical drive unit. This is the only way to protect the battery against dangerous overload.
 - Never open the battery. Danger of short-circuiting which may cause burns or a fire. When you open the battery voids any and all warranty claims.
 - Protect the battery against heat (e.g. prolonged sun exposure) and fire. There is a risk of explosion. Never store or operate the battery near hot or flammable objects.
 - Never submerge the battery in water or clean using a jet of water. Danger of short-circuiting which may pose a fire hazard.
 - Keep the battery not being used away from paper clips, coins,

keys, nails, screws or other small metal objects, that can make a connection from one terminal to another. Shorting the battery-pack terminals together may cause burns or a fire. For short-circuiting damage caused in this manner, any and all warranty claims through Tomos shall be invalid.

- Under abusive conditions, liquid may be ejected from the battery. Avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause skin irritations or burns.
- Place down the battery only on clean surfaces. In particular, avoid soiling the charge socket and the contacts, e. g. by means of sand or soil. Danger of short-circuiting which may pose a fire hazard.
- Never attempt to charge or use a damaged battery. There is a risk of explosion. Always contact your Tomos E-Cargo dealer when your battery is damaged.
- Keep the charger away from rain or moisture. The penetration of water into a battery charger increases the risk of an electric shock.
- Keep the battery charger clean. Contamination can lead to danger of an electric shock.
- Never operate the battery charger on easily inflammable surfaces (e. g., paper, textiles, etc.) or surroundings. The heating of the battery charger during the charging process can pose a fire hazard. Before each use, check the battery charger, cable and plug. If damage is detected, do not use the battery charger. Damaged battery chargers, cables and plugs increase the risk of an electric shock. Never open the battery

charger yourself. Contact your Tomos E-Cargo dealer .

when your battery charger is damaged.

- A sticker in English is adhered to the bottom of the charger. This says: Use ONLY with Tomos lithium-ion batteries. Follow this instruction.



Caution

- Batteries must not be subjected to mechanical impacts. There is a risk that the battery will be damaged causing vapors to escape. The vapors can irritate the respiratory system. Provide for fresh air and seek medical attention in case of complaints.
- The battery may give off fumes if it becomes damaged or is used incorrectly. Provide a fresh air supply and seek medical advice in the event of pain or discomfort. These fumes may irritate the respiratory tract.
- Observe the mains voltage! The voltage of the power supply must correspond with the data given on the nameplate of the battery charger. Battery chargers marked with 230 V can also be operated with 220 V. When the main voltage is too high the battery will be damaged.
- Please observe the operating and storage temperatures of the e-bike components. Protect the electrical drive unit, display and battery against extreme temperatures (e.g. from intense sunlight without adequate ventilation). The components (especially the battery) can become damaged through extreme temperatures.

4 Before first use

On delivery of your bike the battery is supplied partially charged. To ensure full battery capacity, completely charge the battery in the charger before using for the first time. See paragraph 7.2 how to charge the battery.

Prior to your first ride your bike needs to be fit in an optimal way. In this chapter we explain how this should be done.


4.1 Bike fit

Adjust the saddle height and handlebar position according to your personal preference in order to ride your new bike in an optimal way.

Tips for an optimal setting (see image 5):

- Don't put the handlebar too low or too far away. Leaning too much forward will put stress on your lower back and wrists.
- When adjusting the saddle height your feet (not just the toes) should touch the ground while seated on the saddle.
- When positioning your foot on the pedal at its lowest point your knee should be slightly bent.

It is common for an Tomos E-Cargo bike to be ridden by more than one rider. In that case adjusting the seat post height to the correct height is more critical than adjusting the handlebar height.

 Please consult your Tomos E-Cargo dealer for a professional bike fit.

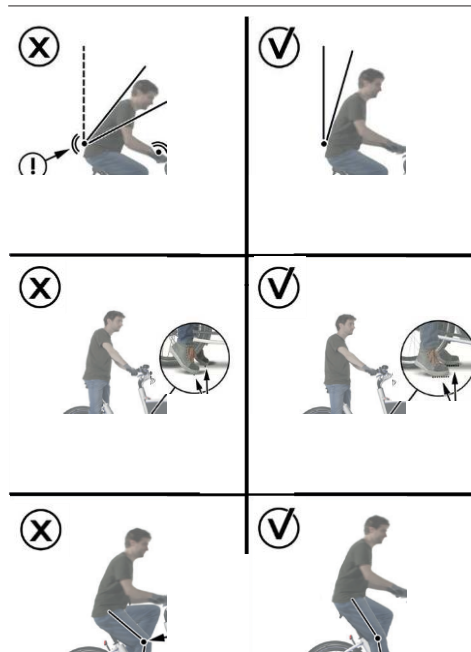



Image 5: Bike fit tips


4.1.1 Saddle height adjustment


The height of the saddle is adjusted as follows:

1. Open the seat post quick release located on the seat post clamp. The seat post will now sit loose in the frame (see image 6).

 **The seat post clamp should remain in place. There is no need to slide it off the frame or to take it off completely.**

2. Put the saddle at the required height. Pay attention to the following:

 **The indication on the seat post (a line of vertical stripes) should never be visible (see image 7). When you extend the seat post beyond the minimum insertion mark the seat post can break during cycling, which may lead to loss of control of the bike.**

 **Never insert the seat post too much, always clamp the clamp on the cylindrical part of the seat post (see image 7). When the clamp is placed on the narrower part of the seat post, the seat post can start turning during cycling. This will cause the saddle to turn during cycling which may lead to loss of control of the bike. There is no mark to indicate the maximum insertion length of the seat post.**

3. Close the seat post quick release completely by pushing it against the seat post clamp (see image 8).

Is the seat post able to turn in the clamp when the lever is closed or are you not able to close the seat post quick release? Then the clamp force needs to be adjusted. Adjust the clamp force as follows:

1. Open the seat post quick release .
2. Adjust the clamp force:
 - a. Turn the adjusting screw opposite the lever a few turns clockwise to make the clamp tighter.
 - b. Turn the adjusting screw opposite the lever a few turns counter clockwise to make the clamp looser.
3. Close the seat post quick release completely by pushing it against the seat post clamp.



Image 6: Opening the seat post quick release

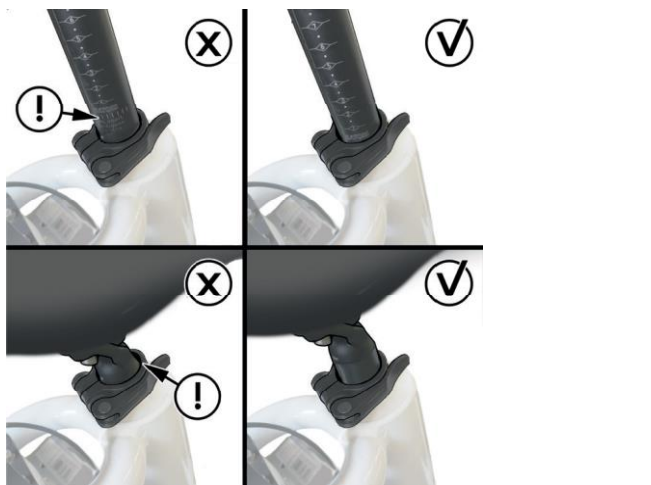


Image 7: Max and min insertion seat post



Image 8: Closing the seat post quick release


4.1.2 Handlebar/stemadjustment

The handlebar position can be adjusted according to your personal preference. Adjusting the angle of the stem will change the handlebar height.

The angle of the handlebar and the angle of the stem are adjusted as follows:


 Use a 5mm Allen key to make the adjustments.

1. Turn the stem bolt a few turns counter clockwise to loosen it. There is no need to rotate the bolt any further.
2. Adjust the angle of the stem and the angle of the handlebar to the required setting.


 Always stay within the range indicated on the side of the stem while adjusting. When you adjust the stem to a position out of this range the stem might break during cycling. This may lead to loss of control of the bike.

3. Turn the bolt clockwise to tighten it.

Tip Use one hand to hold one end of the handlebar and use it to move the handlebar to the required position. Use your other hand to tighten the bolt.

 The bolt should be tightened to the correct torque. Overtightening could lead to the bolt breaking, not tightening the bolt enough could lead to slippage of stem and bars (they could move when you ride over a bump for instance). A confident home mechanic should be able to judge the correct torque by hand. Check appendix A for the correct torque values.

4. Sit on the saddle and face forward. Rotate the grips to optimise the angle of the brake levers.
The angle of the brake levers is set correctly when the brake levers visually disappear behind the grips.

 Always check the angle of the brake lever after you change the stem angle. Change the angle of the grips if necessary. When the brake levers have an incorrect position it is more difficult to exert force, which may lead to reduced break performance.

Tip If you feel you cannot achieve a good bike fit by changing the angle of the stem you might need a different stem and/or handlebar fitted. Please contact your Tomos E-Cargo dealer for advice.

Tip If you are unsure how to adjust the stem or need bike fitting advice, please contact to your Tomos E-Cargo dealer.

4.2.1 Configuration of the ANANDA display

The following changeable basic settings are available on the ANANDA display:



- ① battery capacity indication
- ② USB charging indicator
- ③ Fault reminder indication
- ④ Wi-Fi indication
- ⑤ Headlight status indication
- ⑥ Speed unit indication
- ⑦ Real-time speed value indication
- ⑧ ODO mileage data content indication
- ⑨ ODO mileage mode indication
- ⑩ Current gear level indication
- (11) Assist in the implementation of status indications

Functional operation

Sleep (power off) / Wake up (power on)

◆When the battery has output, the meter is turned on, if you press and hold the battery button, the battery will be turned off, and the meter will automatically turn off at the same time, and the system will be turned off.

◆When the battery has output, the meter is turned on, if the meter is turned off first, and then the battery is turned off, the battery is turned off and the system is turned off.

◆When the battery has output, if the meter is turned on, press and hold the meter on/off key for 2 seconds to turn the meter off. If the meter is not turned on, press and hold the meter on/off key for 1 second to turn the meter on.

◆By default, if the system is not used for 5 minutes (the specific time can also be set in the meter parameter setting/automatic shutdown time setting), the meter will automatically sleep, and the current when the meter is asleep is less than 6mA.

◆If the system is not used continuously for 30 minutes, the battery will automatically turn off and the system will automatically shut down.

◆After the meter is powered on, the "ANANDA" interface will be displayed first, and then the main interface will be entered.



Launch the interface



Main interface

4.2.3 Real-time speed mileage display

On the main interface, the current speed is refreshed in real time, and you can view the mileage-related data.

Short press the "Power On/Off" button to switch the display of ODO mileage data content in the following order: Total mileage → Single mileage → Single mileage time → Average speed of a single mileage → Maximum speed of a single mileage → Motor power → Average power consumption of a single mileage → Instantaneous power consumption → Remaining mileage → Cadence.



Total mileage display



Single mileage display



Single mileage time



Average



Maximum speed



Motor power



Average power consumption



Instantaneous power



Miles remaining



Riding cadence

4.2.4 Turn off headlight auto mode:

In the main interface, the operation of the headlight function can be realized. When the headlight is off, manually short press the "headlight" button to turn on the headlight; When the headlight is on, manually short press the "headlight" button to turn off the headlight.



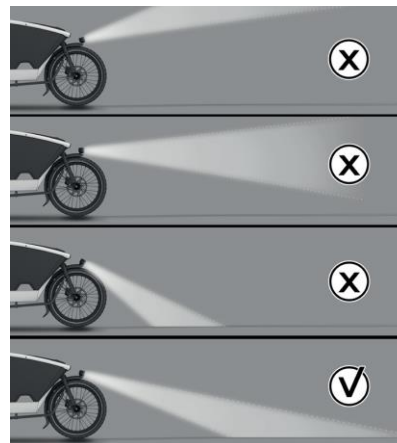
Turn on the automatic headlight status

The headlights are distinguished by a separate logo:



Turn on the automatic headlight status

Turn off the automatic headlight status



EN

Never set up the front light in such a way that the beam is pointing upward. This can cause upcoming traffic to be blinded after which they may lose control over their transportation device and cause an accident.

4.2.5 6km/h to help implement it:

On the main interface, the operation of the 6km/h booster function can be realized. Press and hold the "Push" button, the power push sign lights up and enters the power push interface, indicating that the power push mode is activated, and then press the "push" button again and keep pressing the "push" button, which can perform the 6km/h power boost function; Releasing the "Push" button will invalidate the booster function and exit the booster mode.



Implementation model

4.2.6 Assist in gear adjustment:

In the main interface, gear operation can be realized. Press the "Plus" button to increase the gear, and press the "Minus" button to decrease the gear. By increasing or decreasing the booster gear, the output power of the motor can be changed. The range of instrument power assist gear is 0-5 gears, 0 gear is the motor no output power gear, and 5 gear is the highest output power gear of the motor. The default gear of the meter is 1 gear. When selecting 0~5 gears, "OFF", "ECO", "TOUR", "SPORT", "TURBO", and "BOOST" are displayed respectively. "WALK" is displayed in the booster state.



OFF



ECO



TOUR



SPORT



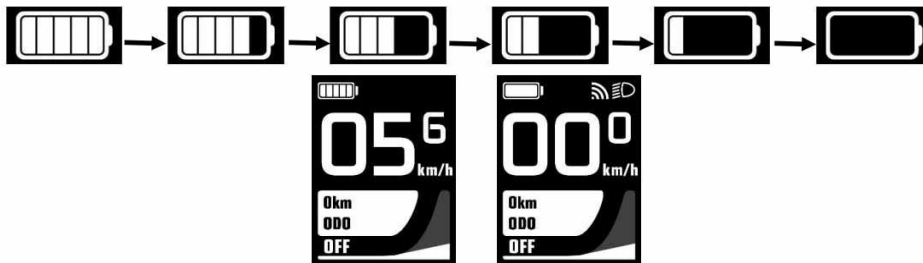
TURBO



BOOST

4.2.7 Power display function:

On the main interface, the battery level is displayed as a real-time refresh. The power level is displayed in two situations, and the power information is obtained from the BMS first, and it is displayed as a percentage. If the power level is not obtained from the BMS, the power level information is obtained from the controller and displayed, and the power level display is divided into 1-5 grids. Get the power information from the controller, which is displayed as shown in the following figure:



Communication disconnection status

The communication is normal

When the battery is fully charged, the battery progress bar or battery bar shows the current battery status. When the battery is low, the current battery status will be displayed with a power progress bar, indicating that the battery is under voltage and needs to be charged immediately.



Plenty of power

The battery is undervoltaged

4.2.8 Error codes are displayed:

When the electronic control system (controller, instrument) fails, the instrument will automatically display the fault code of the latest fault in real time on the main interface, and display the red "⚠" logo in the upper bar. Only after the current fault is eliminated, the display of the fault code can be cleared, and the "⚠" icon displayed in the upper column will disappear synchronously. The error code 30 must be displayed within 5 seconds after the instrument communication is abnormal, and the instrument will automatically shut down after 60 seconds.

EN



Failure error codes are displayed

UART/CAN fault codes			
Older versions of UART display fault codes	The new version of UART/CAN displays the fault code	content	Troubleshooting
28	37	Vehicle speed sensor detection	1、 Adjust the position of the velocity measuring magnet to meet the requirements; Replace the wheel sensors.
25	04	Brake sensor detection	1、 Check that the brake lever is well connected to the controller
28	36	Dynamic torque detection	1、 Replace the torque sensor; If the problem is not resolved, replace the controller
28	50	Handlebar signal detection	Replace the turnbar; If the problem is not resolved, replace the controller
24	03	Motor Hall detection	Replace the controller, or replace the motor if the fault persists
21	01	Motor phase current sensing	If the line connection is normal, replace the controller; If the problem is not solved, replace the motor

21	02	Controller bus current detection	If the line connection is normal, replace the controller; If the problem is not solved, replace the motor
30	30	Communication failures	Check whether the instrument connection is intact; If the fault is not resolved, replace the controller
/	05	Controller temperature detection	1. If there is a fault in the operation of large loads, please stop the operation and wait for the temperature to drop before using it normally. 2. Replace the controller
/	06	Motor temperature detection	1. If there is a fault in the operation of large loads, please stop the operation and wait for the temperature to drop before using it normally. 2. Replace the controller
/	09	Controller bus voltage detection	1. Check whether the battery level is too low. If the battery is too low, please charge 2. if the problem is not solved, replace the controller

4.2.9 USB charging function display:

The menu is activated with USB charging on/off function. The USB voltage output function can be turned on/off via the menu options. You can also press and hold the + button to quickly turn the USB charging function on or off.



USB charging indicator

4.2.10 Wireless function display:

When the wireless function is activated. After powering on, if the wireless is connected, the wireless function indicator will be lit. If the wireless is disconnected, the wireless identification is off.



When wirelessly connected

4.2.11 Instrument parameter setting:

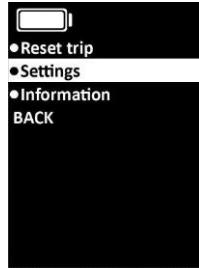
Under the information interface, press and hold the "Plus" button and "Minus" button at the same time to enter the settings menu interface. In the settings menu, short press the "Power On/Off" button to enter the next level menu. Under the final selection menu, short press the "Power On/Off" button to confirm the current option. After selecting the "Back" option, short press the "Power On/Off" button to return to the upper interface. The settings menu interface is divided into four levels of menu settings, as follows:

Level 1 menu	Level 2 menu	Level 3 menu	Level 4 menu
Reset Trip	Yes		-
	No		-
Setting	Brightness	20%	-
		40%	-
		60%	-
		80%	-
		100%	-
	Speed unit	km/h	-
		mph	-
	Consumption unit	Ah/Km	-
		Wh/Km	-
	Language	English	
		French	
		Deutsch	-
	Factory reset	YES	-
		NO	-
Bluetooth	Status		Enable
			Disable

		Name	text
	Auto-off	5min	-
		10min	-
		15min	-
		20min	-
		25min	-
		30min	-
		Usb charge enable	YES
	NO		-
	Available function	Odometer/Trip meter/Trip time/Avg.speed/Max speed Avg consumption/Inst consumption Motor power/Rider power/Range/Cadence	
	Max Speed	12Km/h~25Km/h	
	Power	Level1~Level5	100W~700W
	DrvKs	Level1~Level5	0.1~1.0
	Motor Info	Firmware version	value
		Hardware version	value
		Serial number	value
		WheelSize	value
		Odometer	value

Information	Battery Info	Firmware version	value
		Hardware version	value
		Serial number	value
		Bat.volt	value
		Charge cycle	value
		SOH (%)	value
	Display Info	Firmware version	value
		Hardware version	value
		Serial number	value
	IOT Info	Firmware version	value
		Hardware version	value
Serial number		value	

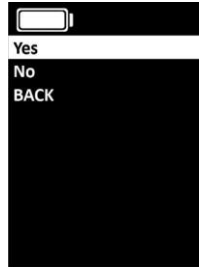
4.2.12 The following describes the specific settings:



Settings interface

Press and hold the "+" and "-" keys at the same time to enter the settings page, then short press the "+" or "-" buttons to select the switching options, and finally press the power button to confirm.

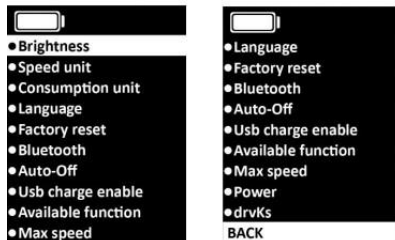
4.2.13 Single mileage parameter reset:



The single mileage parameter reset option is displayed

Short press the "Minus" or "Plus" key to toggle the selection of clear options. Select the "Yes" option, and then press the "Confirm" button to clear the data related to the single mileage. Short press the "Power On/Off" button under the "Back" option to return to the upper interface.

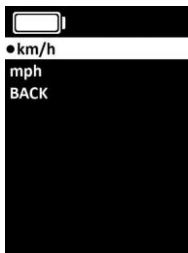
4.2.14 Set up the function interface:



Sensitivity options

Short press the "Minus" or "Plus" button to toggle the option to select the backlight level. Press the "Power On/Off" button to confirm the currently selected backlight sensitivity level. Short press the "Power On/Off" button under the "Back" option to return to the upper interface. Long press the "Power On/Off" button to return to the main interface. The factory default setting is "80%".

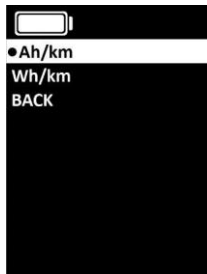
4.2.15 Speed unit setting:



Speed unit options

Short press the "Minus" or "Plus" key to toggle the option to select speed units. Short press the "Power On/Off" button to confirm the currently selected speed unit. Short press the "Power On/Off" button under the "Back" option to return to the upper interface. Long press the "Power On/Off" button to return to the main interface. The factory default setting is km/h.

4.2.16 Power consumption unit setting:



Power Consumption Unit Options

Short press the "Minus" or "Plus" button to toggle the option to select power consumption units. Short press the "Power On/Off" button to confirm the currently selected power consumption unit. Short press the "Power On/Off" button under the "Back" option to return to the upper interface. The factory default setting is Wh/km.

4.2.17 Language settings:



Language options

Short press the "Minus" or "Add" key to toggle the selection of the language option. Press the "Power On/Off" button to confirm the currently selected language. Under the "Back" option, short press the "Power On/Off" button to return to the upper interface.

4.2.18 Factory reset:

PASSWORD is required, the default password is "6262", press the plus/subtract key to increase or decrease the number, short press the power button cursor to jump to the next number setting, and so on, after entering successfully, enter the interface as follows:



Once you have successfully entered your password



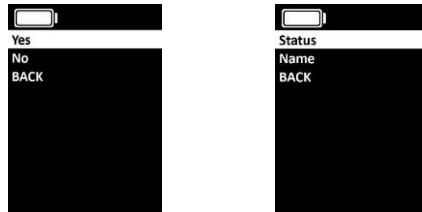
4.2.19 After entering the password successfully, enter the display interface:



Factory reset option

Short press the "Minus" or "Add" button to toggle the selection reset option. Select the "Yes" option, and then short press the "Power On/Off" button to factory reset all data. Select the "No" option to directly return to the previous menu, and the factory default position is in the "No" option. Short press the "Power On/Off" button under the "Back" option to return to the upper interface.

4.2.20 Bluetooth function display:



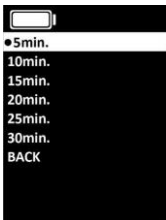
Bluetooth status options



Bluetooth name

Short press the "Minus" or "Plus" button to toggle the option to view the status of Bluetooth or the Bluetooth name setting option. In the Bluetooth status options, select the "Enable" option, and then short press the "Power On/Off" button to set the Bluetooth function. Select the "Disable" option, and then short press the "Power On/Off" button to cancel the Bluetooth function. After the status changes, the meter needs to be restarted for it to take effect. Short press the "Power On/Off" button under the "Back" option to return to the upper interface. The factory default setting is Enable.

4.2.21 Automatic shutdown time setting:



Auto-shutdown duration option

Short press the "Minus" or "Plus" button to toggle the option to select the auto-shutdown duration. Short press the "Power On/Off" button to confirm the currently selected auto shutdown duration. Short press the "Power On/Off" button under the "Back" option to return to the upper interface. The factory default setting is 10min.

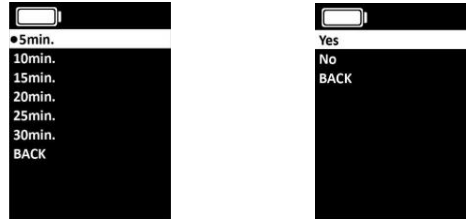
4.2.22 Enable USB charging:



USB charging

Short press the "Minus" or "Plus" key to toggle the selection options. Short press the "Power On/Off" button to confirm the current selection. Short press the "Power On/Off" button under the "Back" option to return to the upper interface.

4.2.23 Maximum speed limit setting:



Limit the maximum speed selection range

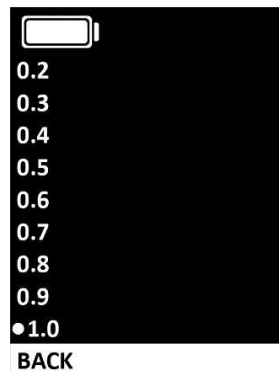
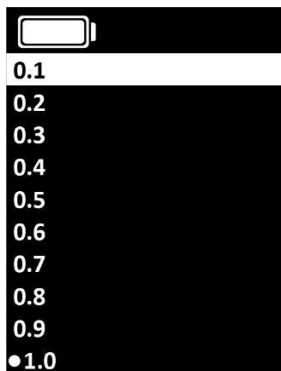
Short press the "minus" or "plus" button to switch the selection, the maximum speed setting, short press the power button to set the maximum speed of 12km/h~25km/h. Short press the "Power On/Off" button under the "Back" option to return to the upper interface.

4.2.24 Wheel diameter setting:



Wheel diameter level setting

Short press the "minus" or "plus" button to switch the selection, short press the power button to set the level between 1 and 5, and the wheel diameter selection range before each level is between 0.1~1.0. Short press the "Power On/Off" button under the "Back" option to return to the upper interface.



Wheel diameter selection range

5 Getting ready to bike

5.1 Gathering first experience


It is recommended to gather first experience with the e-bike away from roads with heavy traffic. Test the operating range of your e-bike under different conditions before planning longer and more challenging rides. Also try out the different assistance levels and take some time to understand the gear hub.


When you first start using the e-bike it is recommended to start in low gear.

The motor output depends on the amount of your pedalling power and the settings of the assistance level on the display. In general:

- Applying less pedaling power means lower assistance or support.
- Applying a lot of pedaling power means higher assistance or support.

As soon as you feel safe, you can participate in traffic with the e-bike as with any other bicycle.

 **When you hit an object with your bike it can cause damage to the front fork and the front wheel. Always be careful when your ride against and over kerbstones. Adjust your speed.**

 **Be careful when touching the disc brakes after heavy use. They can get very hot.**

 **It is recommended that the rider uses a bicycle helmet.**

5.2 Influences on the operating range

The operating range depends on many factors, such as:

- Assistance level,
- Gear switching behavior,
- Bicycle tyres and tyre pressure,
- Age and condition of the e-bike battery,
- Route profile (inclines) and road or path conditions (road or path surface),
- Head wind and ambient temperature,
- Weight of the e-bike, rider and equipment/luggage.

For this reason, it is not possible to precisely predict the range before and during a trip. General rules:

- For **the same** motor output of the electrical drive unit: The less power or force you have to bring about to reach a certain speed (e.g. through optimal use of the gears), the less energy the electrical drive unit will consume, and the greater the range of your e-bike battery.
- The **higher** the assistance level under otherwise same conditions, the lower the range.

5.3 Safety check before every ride

To ensure your bike is safe to ride please check the following safety points before every ride (see image 14). These are quick checks to avoid mechanical malfunctions. Don't use the bike if your bike fails on any of the points and you are not able to solve the issue following the instructions in this manual. Contact your Tomos E-Cargo dealer to discuss the problem.



Image 14: Quick safety check

1. Check if the axle nuts and the drop out bolts aren't loose.
2. Check if the tyres aren't running against the fenders 2, the frame or the lock .
3. Check if the tyres are well inflated 3.

4. Check if the linkage between the handlebar 5 and the fork 4 is play free and that the linkage turns directly and smooth.
5. Check if the brakes 8 are working.
6. Check if the seat post 7 doesn't slip in the frame.
7. Check if the main frame connecting bolts 4 aren't loose.
8. Check if the front 10 and rear lights are working.

5.4 Tyres

Inflate your tyres to the correct pressure:

- Front tyre 2.4-3.5 bar
- Rear tyre 3-4 bar

Tip Ask your Tomos E-Cargo dealer for a correct pump that fits the valves of your bike.

5.5 E-bike battery capacity check

There are two ways to check the charge conditions of the e-bike battery:

- On the battery
- On the display

! When the e-bike battery is empty the e-bike can be ridden as a normal bicycle without assistance.

Checking the charge conditions on the e-bike battery is done as follows:

1. Press the on/off button on the battery.
2. Check the five green LEDs of the charge-control indicator on the battery.
Each LED indicates approx. 20% capacity. When the battery is completely charged, all five LEDs light up.

! If the capacity of the battery is below 5%, all LEDs of the charge-control indicator go out.

Checking the charge conditions of the e-bike battery on the ananda display is done as follows:

1. Press the on/off button on the ananda display
2. Check the battery charge-control indicator on the *ANANDA display*

Each bar of the battery symbol is equivalent to a capacity of approx. 20% (see image 15).

! If the display is removed from the holder 45, the last displayed battery charge level is saved.



The e-bike battery pack is fully charged.



The e-bike battery pack should be recharged.



The LEDs of the charge-control indicator on the battery pack extinguish. The capacity for assisting the drive has been used up, and assistance is gently switched off. The remaining capacity is made available for the lighting and the on-board computer. The charge-control indicator flashes. The capacity of the e-bike battery pack is enough for about two hours of lighting. This does not account for other consumers (e.g. charging external devices at the USB port when you have an ananda display).

Image 15: The charge conditions

5.6 Activating your e-bike

Your e-bike can only be activated (switched on and off) when the following requirements are met:

- The display is properly inserted in the holder (in case of an ananda display)
- A charged e-bike battery is inserted into the battery cradle

- The speed sensor is connected properly

! There is no specific order in mounting the display and the battery.

5.6.1 Inserting, removing, securing and charging the ANANDA display

Inserting the ANANDA display is done as follows:

1. Slide the display from the front into the holder mounted on the handlebar.

Removing the ANANDA display from your bike is done as follows: 1. Press and hold the locking latch and slide the display toward the front out of the holder (see image 16).

! When the display is removed the last indicated assistance level is stored; the motor-output indicator remains empty and the last displayed battery charge level is saved.

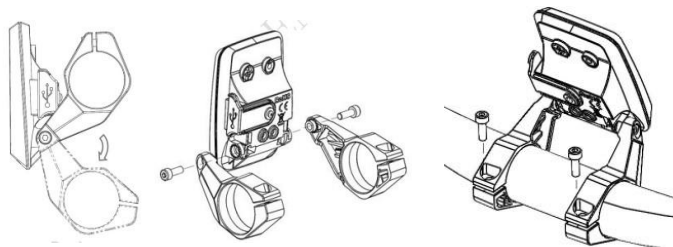


Image 16: Removing the display

Securing the ANANDA display against removal is done as

follows: **!** You need an 4mm Allen key and a M4 screw (8mm long)


1. Unscrew the display holder bolts.
2. Remove the holder from the handlebar by taking the top and bottom part of the display holder apart.
3. Slide the display into the top part of display holder.
4. Screw the locking screw into the thread provided in the top part of display holder.
5. Mount the holder back onto the handlebar.
6. Maximum locking torque: 1N·m

There are two ways to supply energy to the display:

1. Energy supply by the battery of the e-bike:
If the display is in the holder, a sufficiently charged battery

is inserted in the e-bike and the e-bike is turned on, then the onboard computer is powered by the battery of the e-bike.

2. Energy supply by the internal battery of the display:
If the display is removed from the holder, the energy is supplied via an internal battery.

 **If the internal battery is weak when the display is switched on, 'Attach to bike' will appear in text indication for 3 s. The display will then turn off again.**


Charging the internal battery of the ANANDA display is done as follows:

1. Insert the e-bike battery in the battery cradle
2. Put the display in the holder.
3. Press the on/off button of the e-bike battery to switch on the e-bike battery. The internal battery of the display will be charged now.

5.6.2 Placing and removing the e-bike battery from the battery cradle

Inserting the e-bike battery is done as follows:

1. Press the on/off button of the e-bike battery to switch off the e-bike battery.

 **Sparks may be generated between the terminals of your battery and ones of the holder when you don't switch off the battery. These sparks may lead to injuries.**


2. Check if the upper and lower battery holder are clean (no dirt or debris).
3. Place the key into the battery lock.

 **The battery lock uses the same key as the ring lock.**

4. Unlock the battery lock by turning the key counter clockwise.
5. Place the battery with the contacts on the lower holder on the e-bike.
6. Tilt the battery into the top part of the battery holder until it engages. The battery is now locked.

 **You will hear a click when the battery is inserted correctly.**

7. Check if the battery is tightly seated. There should be very little play.
8. Remove the key from the battery lock.

 **Removing the key prevent the e-bike battery from being removed by unauthorised persons when the e-bike is parked.**

5. Pull the battery out of the bottom part of the battery holder

Tip Mind that the key of the battery lock is also used to unlock the bike lock. We advise you to never leave it behind in the battery lock to prevent theft of the e-bike.



- !** Always take your battery out of the frame when you are parking it for longer periods or in high risk areas. It is an expensive part to replace and there is always a chance it will be stolen.

5.6.3 Switching the e-bike on and off

There are multiple ways to switch on the e-bike:

1. When the display is not yet inserted into the holder (in case of an ananda display):
 - a. Switch on the display and place it into the holder. The e-bike will automatically switch on.
 - b. Insert the display into the holder. Switch on the display.

2. When the display is already inserted in the holder:
 - a. Switch on the e-bike battery.
 - b. Switch on the display.

- !** This is under the condition that a charged e-bike battery is inserted in the battery cradle and the speed sensor is properly connected.

There are multiple ways to switch off the e-bike off:

- Switch off the display.
- Switch off the e-bike battery.
- Remove the display out of its holder (in case of an ANANDA display).

- !** If no power is drawn from the e-bike for about 10 minutes (e.g. because the e-bike is not moving) and no button is pressed on the display for 10 minutes, the e-bike and therefore also the e-bike battery will shut down automatically to save energy.

- !** The e-bike can also be ridden as a normal bicycle without



Image 21: Switching the display on and off


5.6.4 Switching the e-bike battery on and off


Switching on the e-bike battery is done as follows:

1. Press the on/off button of the battery.
The LEDs of indicator light up and at the same time indicate the charge condition.

Switching off the battery is done as follows:

1. Press the on/off button of the battery.
The LEDs of indicator go out. This also switches off the e-bike.


-  If the capacity of the e-bike battery is below 5%, no LED on the charge-control indicator lights up. It is only visible on the display, if the e-bike is switched on.


-  If no power is drawn from the e-bike drive for about 10 minutes (e.g. because the e-bike is not moving) and no button is pressed on the display or the control unit of the e-bike, the e-bike and therefore also the e-bike battery will shut down automatically to save energy.

5.7 Opening, closing and adjusting the safety harness

A three point harness is standard equipment on the e-bike. The Fidlock buckle closes the harness. Two pairs of harnesses are mounted, to be used by children seated on the bench.

The length of the belts should be adjusted to the size of the passengers. The belts should not be loose nor too tight. A grown up should be able to put their hand between the belt and the chest of the child. If an adult is seated on the bench they can hold the protection tube to secure themselves.

-  Always secure young passengers with the safety belts before a ride. When young passengers can move freely in the foam box they can be launched when you have to brake. This can potentially be fatal.

-  Never use the bench seats for children who are not able to sit independently. The bench does not offer sufficient head support which may lead to neck or head injury.

Tip To provide easy access to the box for (little) passengers, a cut-out has been made in the side of the foam box to create a step.

This can be used to climb in and out of the foam box.

Closing the safety harness is done as follows:

1. Place both shoulder belt buckles onto the main buckle (see image 22). The magnets in the buckles ensure the parts lock at the correct position.
2. Pull the shoulder belts to check if the harness is securely closed.



Image 22: Closing the safety harness

Opening the safety harness is done as follows:

1. Merge the top two harnesses together and insert them underneath(22)



Image 23: Opening the safety harness

Adjusting the length of the shoulder belts

Press the red buckle and pull out the top two seat belts


5.8 Power supply of external devices via USB connection of the ANANDA display

With the USB connection on the ANANDA it is possible to operate and charge most devices whose power supply is possible via USB (e.g. various mobile phones).

 **The USB connection on the ANANDA display is only for service purposes.**

Supplying your external device with power via the display is done as follows:

1. In case you have an ANANDA display: Place the display in the display holder.
2. Place a charged battery in the battery holder. See paragraph 5.6.2 for instructions.
3. Open the USB port protective cap.
4. Connect the USB connection of the external device to the USB port. Use the USB charging cable Micro A – Micro B (available from your Tomos E-Cargo e-bike dealer).

 **As soon as you connect the external device to your display, the text ‘USB connected’ will appear on the screen of the display.**

5. Close the USB port protective cap after disconnecting the external device.



A USB connection is not a waterproof plug-in connection. Moisture can cause internal damage to the display. Always completely seal the USB connection with the protective cap 74. Never connect an external device when you ride in the rain.

6 Changing settings during biking

There are a few settings that can be changed while driving, being: shifting the gears, changing the assistance level and switching the push assistance mode on and off. When standing still a number of display functions can be reset. In the following paragraphs we explain how you can change the above mentioned settings.

6.1 Shifting gears

Adjusting the gears settings is done as follows:

- a. Shifting to a lower gear (before riding away or riding uphill) by turning the grip shifters continuously variable clockwise (see image 28).

! Selecting a lower gear will put less stress on the drive train and you will gain speed more quickly.

! When you have a grip shifter with grip indicator the image on the grip indicator 84 changes from a bicycle on a (more) flat surface into a bicycle on a hill (see image 28).

- b. Shifting to a higher gear (when riding fast or riding downhill) by turning the grip shifters continuously variable counter clockwise (see image 28).

! When you have a grip shifter with grip indicator the image on the grip indicator changes from a bicycle on a hill into a bicycle on a (more) flat surface (see image 28).

! Shifting gear while standing still is possible but only within a limited range. Resistance will increase until it isn't possible to rotate the lever any further. Don't apply unreasonable force to rotate the lever beyond this point. Once the bike starts rolling you can shift through the whole range of the gear hub again.

! Independent of the type of gearing, it is recommended to briefly interrupt the pedalling while changing gears. This makes changing gears easier and reduces the wear of the drive train.

! Selecting a lower gear riding away from a stop will reduce strain on the drive train components and increases the operating life of your bicycle. Selecting the correct gear will also affect the range of your battery positively.

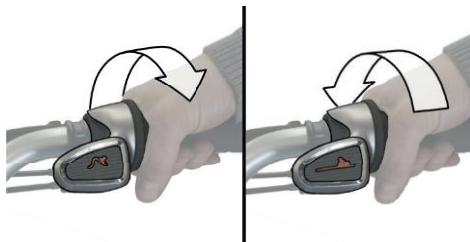


Image 28: Shifting to a lighter (lower) or heavier (higher) gear

Battery Capacity Indication

HMI displays the real-time battery capacity from 100% to 0%. When the battery capacity is less than 5%, the indicator will blink at frequency of 1 Hz to alert to recharge.



Bluetooth Function

This HMI is equipped with OTA function, which can update firmware of HMI, controller, sensor and battery through the Bluetooth.

This HMI can be connected to the ANANDA Go APP through Bluetooth. The customer also can develop their own app based on the SDK provided by ANANDA.

The data that can be sent to the APP are as follows:

7.6.8 USB Charge Function


When the HMI is off, insert the USB cable to the charge port on the HMI, and then turn on HMI to start charging. The maximum charge voltage is 5V and the maximum charge current is 1A.

7 After biking

7.1 Locks

Your e-bike is provided with two locks, one lock on the rear frame and one lock on the battery. These two locks share the same key. Lock the bike, using the wheel lock and preferably an additional lock to secure the e-bike to a static object. This will reduce the chance of theft.

Write down the manufacturer and the number of the key.

 **In case of loss of the keys, please refer to your Tomos E-Cargo dealer**

Closing the ring lock is done as follows:

1. Put the e-bike on the kickstand. This will prevent damage to the spokes when closing the ring lock.
2. Rotate the key 20 to 30 degrees clockwise (not a full turn) and hold it in this position (see image 29).
3. Simultaneously push down the lever on the opposite side of the lock till the pin snaps into its end position. The key is released (see image 30).
If the pin hits a spoke, rotate the wheel slightly.
4. Take out the key from of the lock (and store it in a safe place).




Image 29: Rotate the key 20 to 30 degrees clockwise



Image 30: Push down the lever

Opening the ring lock is done as follows:


1. Put the e-bike on the kickstand.
2. Put the key in the ring lock.
3. Rotating the key counter clockwise. The pin is spring loaded and will return to its unlocked position automatically.

 **The key will remain in the lock when the lock is open. It cannot be taken out.**

7.2 Charging the e-bike battery


Before you use the e-bike battery for the first time you need to check the battery before you can charge it fully. Checking is done as follows:


1. Press the on/off button to switch on the battery. At least one of the LEDs will light up.


 **When no LED of the charge-control indicator lights up, the battery may be damaged. Contact your Tomos E-Cargo dealer.**

There are two ways of charging the e-bike battery (see image 31):

- Charging while the battery is placed in the battery holder on the e-bike.
- Charging the battery after you removed it from the e-bike.


 **Before each use, check the battery charger, cable and plug. If damage is detected, do not use the battery charger. Damaged battery chargers, cables and plugs increase the risk of an electric shock. Never open the battery charger yourself. Contact your Tomos E-Cargo dealer when your battery charger is damaged.**

 **Keep the battery charger clean. Contamination can lead to danger of an electric shock.**

 **Always keep the charger away from rain or moisture. The penetration of water into a battery charger increases the risk of an electric shock.**

 **A sticker in English is adhered to the bottom of the charger**

This says: Use **ONLY** with Tomos lithium-ion batteries.

 Do not expose the charger to rain or wet conditions. If water enters a charger there is risk of electric shock.





 Use caution when touching the charger during the charging procedure. Wear protective gloves. Especially in high ambient temperatures, the charger can heat up considerably.



Image 31: Charging a battery

 The e-bike battery is equipped with a temperature control indicator, which enables charging only within a temperature range between 0 °C and 40 °C. The battery can be recharged at any time without shortening the lifespan and interrupting the charging process does not damage the battery.

 The electrical drive unit is deactivated during the charging procedure.

 The e-bike battery must not be left unattended while charging.

Charging the e-bike battery while placed in the battery holder is done as follows:

1. Press the on/off button to switch off the battery.
2. Clean the cover of the charge socket. Avoid soiling the charge socket and the contacts, e.g. by means of sand or soil.
3. Lift the cover of the charge socket.
4. Plug the charger plug into the charge socket on the bottom part of the battery holder (see image 32).
5. Plug the charger plug of the power cord into the charger socket of the charger.
6. Connect the mains cable of the battery charger to the mains supply. The charging procedure will start.


 See below for more information on the charging status and what to do after charging.



Image 32: Plugging charger plug in charge socket on the bottom part of the battery holder

Charging the e-bike battery after it has been removed from the e-bike is done as follows:

1. Place down the battery on a clean surface. In particular, avoid soiling the charge socket and the contacts, e.g. by means of sand or soil.
2. Press the on/off button to switch off the battery.
3. Remove the battery from the holder (see paragraph 5.6).
4. Insert the charger plug of the battery charger into the socket (see image 33) on the battery.
5. Connect the mains cable of the battery charger to the mains supply. The charging procedure will start.

Tip See below for more information on the charging status and what to do after charging.



image 33)

Charging state of the e-bike battery

The e-bike battery can be charged with or without the display. When charging without the display, the charging procedure can be observed on the battery charge-control indicator. When charging with the display the bars on the display show the progress as well.

! The ananda display can be removed during the charging procedure or fitted after the charging procedure has started.

Each continuously lit LED on the charge-control indicator is equivalent to a charge capacity of approx. 20 %. A flashing LED indicates the charging of the next 20 %. Once the e-bike battery is fully charged, the LEDs extinguish immediately and the display (in case mounted) is switched off. The charging procedure is terminated.

Aftercharging

The procedure after the charging procedure is terminated is as follows:

1. Disconnect the charger from the main power supply.
2. Disconnect the battery from the charger. The battery automatically switches off.
3. If you have charged the battery while placed in the battery holder on the bike, carefully close the charge socket with the cover so no dirt or water can get into the charge socket.

- Regularly recharge the battery
- Check the charge condition after 6 months. When only one LED of the charge-control indicator lights up, recharge the e-bike battery again to approx. 60 %.
- Don't connect the e-bike battery permanently to the charger.
- Don't store the e-bike battery on the bike.
- Store the e-bike battery in a dry, well-ventilated location. Protect the battery against moisture and water. Under unfavorable weather conditions, it is recommended e.g. to remove the battery from the e-bike and store it in an enclosed location until being used again.

! When the e-bike battery is stored discharged (empty) for longer periods, it can become damaged despite the low self-discharging feature and the battery capacity may be strongly reduced.

Temperature

The e-bike battery can be stored at temperatures between $-10\text{ }^{\circ}\text{C}$ and $+60\text{ }^{\circ}\text{C}$. Take care that the maximal storage temperature is not exceeded. As an example, do not leave the battery in a vehicle in summer and store it out of direct sunlight. For a long battery life storing the e-bike battery at a room temperature of approx. $20\text{ }^{\circ}\text{C}$ is of advantage.

8 Cleaning and maintenance

! Be aware that the display can activate itself when the e-bike is pushed backwards. When you press the on/off button on the activated display the electrical drive unit could switch on. Remove the battery from the e-bike before you begin work (e.g. inspection, repair, assembly, maintenance, work on the chain, etc.) on the e-bike, transport it by car or plane, or store it. Unintentional activation of the electrical drive unit poses a risk of injury.

8.1 Cleaning

- Keep all components of your e-bike clean, especially the battery contacts and corresponding holder contacts. Clean them carefully with a soft, damp cloth.

Tip It is advised to regularly clean the lenses of your lights, it will improve the lighting performance.
- All components including the electrical drive unit may not be immersed in water or cleaned with a high-pressure cleaner.
- Never submerge the e-bike battery in water.

- Clean your bike in shorter intervals when you cycle on roads have been prepared with winter road salt. The road salt may cause damage to parts of your bike.

! Never submerge the battery in water or clean using a jet of water. Danger of short-circuiting which may pose a fire hazard.

! The gear hub and grip shifter are sealed and well protected from the external environment. However, never use water under pressure (such as pressure washers or water jets) when you clean these parts to prevent malfunctions due to water penetration.

! Never use aggressive cleaners on any of the parts of your e-bike. This may cause permanent damage to the bike.

8.2 Maintenance

8.2.1 Speed sensor check

In order for the speed sensor to function:

1. The clearance between the speed sensor and its speed sensor magnet needs to be at least 5 mm, yet no more than 17 mm after a turn of the wheel (see image 35). See later in this paragraph for information on how to adjust the clearance if necessary.
2. The speed sensor needs to be connected properly.

! Contact your Tomos E-Cargo dealer in case the speed sensor is not connected properly.

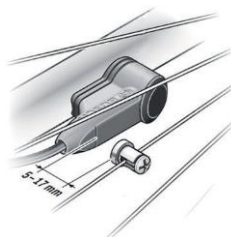


Image 35: Distance between the speed sensor and the speed sensor magnet

The speed indication on your display will fail in case the speed sensor doesn't function properly. The text 'error 37' will appear on the screen of your display.

! Cycling remains possible when the speed sensor doesn't function, but there will be no pedalling assistance as the electrical drive unit will be turned off automatically while functioning in this error mode.

Adjusting the clearance between the speed sensor magnet and the speed sensor is done as follows:

1. Loosen the screw of the speed sensor magnet by turning it counter clockwise.

2. Position the speed sensor magnet in such a manner that it runs past the mark of the speed sensor at the correct clearance (min. 5 mm, max. 17 mm, see image 35).
3. Fasten the speed sensor magnet to the spoke by turning the screw clockwise.



In case the speed is still not being indicated in the speed indication, please contact your Tomos E-Cargo dealer.

8.2.2 Punctures

Preventing punctures

There are ways to prevent punctures beside mounting puncture resistant tyres. Please check the following check-up and riding tips.

Check-ups

- Check the surface of your tyres from time to time, running your hand or fingers over the surface. This way you might find sharp objects logged in the outer surface before they puncture the inner tube of your tyre. Be careful doing this with your bare hands.
- Check the wear of your tyres. The tread of your tyres will become thinner over the distance, making it easier to be punctured.
- Keep your tyres at the correct tyre pressures. Low tyre pressures will increase the chance of picking up dirt and

debris. Low tyre pressures can also cause pinch punctures where the inner tube is damaged by being pinched between rim and tyre over bumps. For correct tyre pressures please check paragraph 5.4.

Riding tips

- Avoid riding through potholes.
- Avoid riding into train/tram tracks. The tyres are wide enough not to be caught by the track but your steering will be affected.
- Avoid train/tram track in the wet. Don't cross them at too parallel an angle. The track can be very slippery.
- Avoid hitting curbstones at too high a speed. It may cause damage to your bike.
- The side of the road is where dirt accumulates. Avoid riding there if there is room in traffic and the situation allows.
- Have an eye on the road and drive around debris and dirt sitting on the road. Having a safe road position is more important though, don't change direction without checking the traffic around you.

In case of a puncture don't continue riding. There is a big chance you will damage the tyre, the wheel or even the frame. Dismount the bike and walk home.



Cycling with a punctured tyre can cause seriously reduced road holding which may lead to loss of control of the bike. Never continue cycling in case of a punctured tyre.

At home you can:

- Fix the puncture yourself in case you have *good access* to the puncture: use a repair kit and follow the instructions that come with the repair kit.
- Fix the puncture yourself in case you *don't have good access* to puncture: remove the wheel from the frame and fix the puncture. Check the next paragraph for more information on how to remove the front of rear wheel.

! You need to be a confident and skilled home mechanic to remove a rear wheel from the frame.

- Contact a professional bike mechanic (preferably an Tomos E-Cargo dealer) who can fix the puncture for you.

8.2.3 Maintenance check

When you have your e-bike maintained/serviced by your Tomos E-Cargo dealer all necessary maintenance will be performed by your dealer. But in between the maintenance you can perform the following checks yourself.

Checking a tyre: recognized by checking the tread pattern. If the pattern has disappeared in the middle of the tread (difference between lowered and raised material cannot be distinguished) the tyre is worn and should be replaced (see image 36). If you notice long or deep tears the tyre should be replaced even if the tread hasn't worn out yet. Contact your Tomos E-Cargo dealer for the correct spare part.



Image 36: Tyre wear

8.2.4 Gear adjustment

- Check tyre pressure: Riding a too low tyre pressure damages the tyre. In the sidewalls tears will appear that cannot be repaired. Sometimes a few hundred km's at too low pressure is enough to ruin the tyres. The correct tyre pressure is as follows:
 - a. Front wheel: 2.4-3.5 bar
 - b. Rear wheel: 3-4 bar

Tip Ask your Tomos E-Cargo dealer for a correct pump that fits the valves of your bike.
- Wheel trueness : If a wheel is out of true it will wobble while spinning. You can check this by putting the bike on its stand and giving the wheels a spin (see image 37). If the wheel is spinning look at the rim and tyre separately. An incorrectly fitted tyre can also cause a wobble. A new wheel needs to settle and will require its trueness being checked more often. Contact your Tomos E-Cargo dealer in case your wheel wobbles to have your wheel fixed.



- Check the rim for damage. Damage can take the form of dents and cracks in the rim surfaces and around the spoke holes. Always check the rim after hitting a solid object or pothole at speed or after you rode with a flat tyre. A damaged rima my damage the tyre and could make the wheel go out of true. Contact your Tomos E-Cargo dealer in case you detect rim admage.
 - Check play on the hub axle. Hub bearings can develop play due to wear. Excessive hub play can affect brake performance, it can cause other mechanical problems as well as affect the handling of the bike. Contact your Tomos E-Cargo dealer in case you detect play on the hub axle.
-
-

- Check play on the steering linkage: the steering input of the handlebar needs to be transferred to the front wheel. This action is provided for by the steering linkage.



Image 40: Checking the lock rubbers

Contact your Tomos E-Cargo dealer in the following cases:

- If the chain audibly scratches the chain case. A chain will wear over time causing it to increase in length. Have your dealer adjust the chain tension.
- If you feel there is excessive resistance caused by the chain case.
- If the front wheel does not change direction when steering input (handlebar rotation) is given stop riding immediately and contact your Tomos E-Cargo dealer.
- If you detect play in the pedals or cranks, for instance if you can feel them move around during a pedal stroke.
- If you notice a significantly reduced operating period after charging. The battery life can be prolonged when being


properly maintained and especially when being operated and stored at the right temperatures. With increasing age, however, the battery capacity will diminish, even when properly maintained. A significantly reduced operating period indicates that the battery is worn out and must be replaced. You can replace the battery yourself.

- If you see a wobble in the wheel. First make sure the tyre is seated correctly on the rim. If it is seated correctly ask your Tomos E-Cargo dealer to repair the wheel.




As with all mechanical components, the e-bike is subjected to wear and high stresses. Different materials and components may react to wear or stress fatigue in different ways. If the design life of a component has been exceeded, it may suddenly fail, possibly causing injuries to the rider. Any form of crack, scratches or change of coloring in highly stressed areas indicate that the life of the component has been reached and it should be replaced.

8.2.5 Spares, accessories and safety-critical parts

-  Always use genuine replacement parts approved by your Tomos E-Cargo dealer. When using other replacement parts, Tomos E-Cargo shall not assume any liability and warranty.

Contact your Tomos E-Cargo dealer for the following e-bike spare parts:

- Brake friction pad
- Chain/belt
- Sprockets
- Brake cable
- Gear cable
- Disc brake fluid
- Grip shifter
- Grips
- E-bike battery



-  Always use original Tomos E-Cargo batteries approved by your Tomos E-Cargo dealer. When you use other batteries, Tomos E-Cargo shall not assume any liability and warranty. The use of incorrect batteries can cause short circuiting and/or overheating which may lead to injuries and pose a fire hazard.

Contact your Tomos E-Cargo dealer in case the following accessory needs replacement:

- Charger for the e-bike battery

Contact your Tomos E-Cargo dealer in case the following safety critical parts need replacement:

- Handlebar
- Stem
- Front fork
- Seat post
- Headset
- Brakes (roller brake and disc brake)
- Pedals
- Wheel (front and rear)
- Light (front and rear)
- Safety harness including Fidlock buckle
- Reflectors
- Speed sensor
- Tyre (front and rear)


-  Aftermarket modification to the speed sensor is considered as tampering.
-  Don't fit your bike with tyres of a different measurement than specified. When you use a tyre with deviating specs it will affect both the Tomos E-Cargo electric system as well as the handling of the bike.


9 Transport

The batteries are subject to the Dangerous Goods Legislation requirements. Private users can transport undamaged batteries by road without further requirements.

When being transported by commercial users or third parties (e.g. air transport or forwarding agency), special requirements on packaging and labelling must be observed (e.g. ADR regulations). If necessary, an expert for hazardous materials can be consulted when preparing the item for shipping.

Dispatch batteries only when the housing is undamaged. Tape or mask off open contacts and pack up the battery in such a manner that it cannot move around in the packaging. Inform your parcel service that the package contains dangerous goods. Please also observe the possibility of more detailed national regulations. In case of questions concerning transport of the batteries, please refer to an authorised Tomos E-Cargo dealer. The Tomos E-Cargo dealers can also provide suitable transport packaging.

 **When you carry your e-bike outside of your car, e.g. on a luggage rack, the battery and/or display could fall out of their holders during transport. Always remove the battery and the display during transport to prevent damage to them.**


 **Be aware that the display can activate itself when the e-bike is pushed backwards. When you press the on/off button on the activated display the electrical drive unit could switch on.**

Remove the battery from the e-bike before you begin work (e.g. inspection, repair, assembly, maintenance, work on the chain, etc.) on the e-bike, transport it by car or plane, or store it. Unintentional activation of the electrical drive unit poses a risk of injury.

10 Service plan

Having maintenance carried out following the Tomos E-Cargo service plan will keep your Tomos E-Cargo in top shape. The check-ups and adjustments that are part of regular maintenance will

prevent breakage and costly repairs. Some Tomos E-Cargo dealers can arrange a pickup service for your bike. Check with your dealer for the possibilities.

 **Your warranty will be voided in case your Tomos E-Cargo Cargo not has been maintained/services by a registered Tomos E-Cargo dealer.**

When the service appointment is due, the display of the ANANDA display will inform you of this for 4 seconds in the text indication by displaying 'Service' after the display has been switched on. On the *Purion* display the service indicator will light up.

Model information	
Model type	
Frame number	
E-bike system	
Motor serial number *	
Battery serial number *	
Charger serial number *	
Display serial number **	
Dealer	
Delivery date	

* Each of these components have a label containing the serial number. This serial number starts with 'JX'.

** Tomos E-Cargo frame numbers start with 'JX2404001' and will consist of 9 characters.

Owner information	
Name	
Address	
Country	

 **The gear hub and grip shifter internal freewheel mechanisms are serviceable.**

11 Disposal

Your bike contains electrical components and needs to be disposed via your Tomos E-Cargo dealer.

Chargers, batteries, accessories and packaging should be recycled in an environmentally friendly manner. Do not dispose of batteries and chargers along with household waste. Apply tape over the contact surfaces of the battery terminals before disposing of batteries. Do not touch severely damaged e-bike batteries with your bare hands – electrolyte may escape and cause skin irritation. Store the defective battery in a safe location outdoors. Cover the terminals if necessary and inform your Tomos E-Cargo dealer. They will help you to dispose of it properly.

Only for EU countries: In accordance with Directive 2012/19/EU and Directive 2006/66/EC respectively, electronic devices that are no longer usable and defective/drained batteries must be collected separately and recycled in an environmentally friendly manner. Please return batteries and (the electric and electronic parts of) your bike that are no longer usable to an Tomos E-Cargo dealer.

12 Appendix B Overview Maintenance

Service check-up at the dealer

- After 500 km;
- after 1500 km;
- every 2500 km;
- or every 12 months, whatever comes first.

Category	Service or Maintenance	Before every ride	Monthly	Dealer Service Check-Up
Wheels	Check tyre pressure. Tyre pressure should be 2.4-3.5 bar (front tyre) and 3-4 bar (rear tyre).	Rider / owner		Tomos E-Cargo dealer
	Check tyre tread and sidewalls for wear and cracks.		Rider / owner	
	Check for damaged and/or loose spokes.		Rider / owner	
	Check spoke tension. All spokes should at least have the same tension and the tension should not be too low.			Tomos E-Cargo dealer Tomos E-Cargo dealer
	True or retighten spokes if needed.			Tomos E-Cargo dealer
	Check wheel nuts and spanners.			Tomos E-Cargo dealer
	Check the rim for damage.		Rider / owner	Tomos E-Cargo dealer
	Check play on the hub axle.		Rider / owner	Tomos E-Cargo dealer
Brakes	Check the function of both brakes. Do not ride the bike if brake power is insufficient.	Rider / owner		

Category	Service or Maintenance	Before every ride	Monthly	Dealer Service Check-Up
	Disc brake: Check for oil leakage at the seals.		Rider / owner	Tomos E-Cargo dealer
	Disc brake: Check brake pads wear; replace when needed.		Rider / owner Ask your dealer for help if you are not sure how to spot excessive brake pad wear.	Tomos E-Cargo dealer
	Roller brake: Check cable travel and brake grease. Adjust if needed. Grease brakes if needed.			Tomos E-Cargo dealer
	Check the brake cables for damage. There shouldn't be any sharp bends, nodes in the cables. Check if the brake cables don't come in contact with moving parts of the bike.		Rider / owner	Tomos E-Cargo dealer
	Disc brake: Check thickness of the disc rotors.			
Drive train	When you have a chain drive: wiggle the chain glider case so you can hear and feel whether the chain is still tight or not. When you have a belt drive: the tension can be measured with the Gates Carbon Drive Mobile Apps, offered on both iPhone and Android. These apps can measure the belt tension in the form of natural frequency (Hz) of the belt span. Operating instructions are provided within each app. The belt tension for your Tomos E-Cargo should be between 35Hz and 50 Hz.		Rider / owner	Tomos E-Cargo dealer

Category	Service or Maintenance	Before every ride	Monthly	Dealer Service Check-Up
	Check chain lubrication.			Tomos E-Cargo
	Check chain/belt wear, replace if needed. Replacing the chain on time prevents unnecessary wear to chainring and sprocket.			Tomos E-Cargo
	Check chainwheel and sprocket wear, replace parts if needed.			Tomos E-Cargo
	Check crank bolts, tighten if needed.			
	Lubricate shifter cables.			Tomos E-Cargo
	Check function of ananda motor unit.			Tomos E-Cargo dealer All service work to the motor can only be done by a certified Tomos E-Cargo.
Steering	Check if the linkage between the handlebar and the fork is play free and that the linkage turns directly and smooth.	Rider / owner Contact your dealer if you feel there are irregularities in the steering linkage.		
	Check Ahead steering set front fork for play. Adjust when needed. Play in the headset could provoke vibrations. It is essential that play is eliminated. Check with your dealer when in doubt.		Rider / owner	Tomos E-Cargo

Category	Service or Maintenance	Before every ride	Monthly	Dealer Service Check-Up
	Check for play on ball joints or its threaded connection.		Rider / owner	Tomos E-Cargo
	Check ball joints for function and wear, replace if needed.			
	Check damper plate function, tighten if needed.			Tomos E-Cargo
Frame	Clean and polish the paintwork.		Rider / owner (at least every 6 months)	
	Check connecting bolts between front and rear frame by hand.			Tomos E-Cargo
	Check frame for irregularities.			Tomos E-Cargo
Controls	Check if the seat post doesn't slip in the frame, make sure the seat post clamp is tightened. Check if the seat post is not extended too far out.	Rider / owner		Tomos E-Cargo
	Check stem - handlebar connection.			
	If Installed: Check the suspension seat post for play or irregularities.			
	If Installed: Clean and lube the suspension seat post. Check all hinges and bolts.			Tomos E-Cargo
Other	Check that the front and rear light work.	Rider / owner		Tomos E-Cargo