



TETSU T1 E-BIKE

User Manual

Adventure

made easy ...

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1. GENERAL

1.1 WELCOME!

Thank you for purchasing a TETSU T1 e-bike and welcome to a new way of cycling. The T1 allows you to go further and go to places you otherwise wouldn't, keeping you fit without over-exerting. Most importantly, it's FUN!

Your TETSU e-bike has been designed for Canadian conditions and regulations, using the latest high quality components to ensure years of trouble-free rides. We are passionate about our products and are sure you're going to love your new bike. We'd love your feedback to help us continue to improve our products and services. You can reach us via email at contact@Inmotion.com – we'd love to hear from you!

1.2 USE OF THIS MANUAL

Please read this manual carefully before you start riding on your new TETSU T1 e-bike as it will provide valuable safety information and key advice to help you keep your e-bike in the best possible condition.

1.3 SERVICE AND TECHNICAL SUPPORT

This manual is not intended to be a comprehensive reference book about service and maintenance. To contact our Canadian office for any additional technical support, send us an email at support@Inmotion.com

Please note that users should not attempt to modify any of the technical or mechanical characteristics of this e-bike without prior consultation with Land Motion Ltd. Any such modification may nullify the validity of the product warranty.

2. ASSEMBLING YOUR BIKE

2.1 ASSEMBLY STEPS

Each TETSU e-bike has been carefully assembled and tested before leaving the factory. When packed we usually remove some or all of the following parts to ensure safe transportation:

- Front wheel
- Handlebar
- Seat post
- Pedals

NOTE: These parts can be very easily installed by following the guidelines below. If you have little or no experience with bicycle maintenance we recommend you get this done at your local bike shop.

2.1.1 Front Wheel Assembly







Fig. 2



Fig. 3



Fig.4

- 1. Carefully position the wheel on the forks so that the disc fits in the small gap between the brake pads.
- 2. The wheel should settle completely into the dropouts (Fig.2)
- 3. First install the gasket, then install the nut, and finally tighten it with a wrench.(Fig.3,4)

2.1.2 Handlebar Assembly



Fig. 5

Fig. 6

Fig. 7

Fig. 8

- 1. Prepare the parts found in Fig. 5. This bracket fastens the handlebars to the bike in step 3.
- 2. Align the stem so that the bracket faces outwards, like in Fig. 6, and then tighten with the Allen Key.
- 3. Place the Handlebars into the open space and make sure to align them so that the middle of the handlebars sits nicely in place
- 4. Align the closing bracket with the stem bracket and tighten the four unit screws with the Allen Key. (Fig.6-8)

2.1.3 Saddle Assembly



Fig. 9



Fig. 10



Fig. 11

- 1. Open up the quick release lever on the end of the frame (Fig. 9)
- 2. Insert the saddle post and adjust the desired height of the saddle. (Fig. 9, 10) refer to pg. 12 for correct saddle height

3. Close the quick release lever, ensuring it is tight. If too loose, release lever and tighten the allen head bolt until the lever can be firmly locked into place (Fig. 12)

2.1.4 Pedal Assembly



riy. 12

There are two pedals (marked "WL" and "WR") included in the box with your bike (Fig. 12,13).

The pedals screw into the ends of the cranks without any extra nuts, screws or pins.

- 1. Screw each pedal into a crank by hand. (Fig. 14 & 15). (Please note that the left hand side pedal has a reverse thread (Fig. 15).
- 2. Use a spanner to firmly tighten the pedal in place.

NOTE: Ensure both pedals are tightened fully.

2.2 FINAL CHECK BEFORE RIDING

Check all other components on the bike to ensure everything is tight and secure before riding. Get your local bike shop to check the bike before use if you are not sure about anything, or email us at **contact@Inmotion.com**. If you need any help - we're happy to assist.

3. GETTING TO KNOW YOUR E-BIKE

3.1 BATTERY REMOVAL

The battery can either be charged while still in the bike, or while removed. Before removing the battery, ensure the display is turned off. First unlock the battery securing latch (on the left side of the frame, just above the battery) by sliding it away from the battery. While holding the underside of the battery closest to the lock end, insert the key and unlock the battery by turning the key anticlockwise. The battery should lower, slightly adjacent to the lock. Remove battery by holding firmly and pulling downwards in an arc motion.

3.2 CHARGING

IMPORTANT NOTES:

- 1. Only use the TETSU charger included with your bike. Other chargers may damage the battery.
- 2. Before charging, turn the bike's display control off.
- 3. Keep the charger in a cool, dry, well ventilated area when using. Do not cover it with anything while it is in use. It is normal for the charger to be warm during use.
- 4. Note that the charger is designed for indoor use only. Do not get the unit wet.
- 5. Connect the charger to the battery first and then connect the charger to the power outlet.
- 6. The red charging light will appear while the battery is being charged. Once fully charged (4-6 hours) the light will change to green. The charger will continue a trickle charge once the green light comes on. This ensures that the battery remains in the fully charged state. **Do not charge for more than 10 hours at a time to avoid over-charging and potential damage to the battery**.
- 7. Once charging is complete disconnect the mains supply to the charger. Do not leave the charger plugged into the power outlet for extended periods of time as this may cause damage to both the charger and battery





Fig. 16 Charger

Fig. 17 Charging Port and Electrical Contacts

To charge the battery:

- 1. Lift the round rubber flap on the left side of the frame (if charging with battery in-bike) or the rubber flap on the inner bottom end of the battery itself (if you have removed the battery). Insert the end of the charging cable into the charging port. Then plug the charger into the power outlet (a red indicator light will appear). It is important to connect in this order battery first and then connect to main power as the second step.
- 2. Charge the battery until the signal indicator light turns from red to green.

NOTES:

- Do not store the battery for long periods of time without charge. If you must store the battery for a long time without use, you should charge it to a minimum of 60% capacity at least every two months to avoid reducing the battery's operating life.
- 2. Avoid complete discharge of the battery. If this occurs, recharge as soon as possible.
- 3) Avoid repeated topping up of the battery if it still has 80% or more charge. Battery life will be optimised if it is regularly charged to a point between 20 and 80%

3.3 BATTERY INSTALLATION

Note that the battery will only fit one way into the frame. The end with the charging port and electrical contacts must be adjacent to the pedal crank of the bike. Insert this end first and swing the other end of the battery in an arc motion until it clicks securely into place in the frame. Then slide the securing latch (on the LHS of the frame) towards the battery to secure the battery in place.

3.4 DISPLAY FUNCTIONS

3.4.1 Function Summary

The LCD display unit on your TETSU e-bike can provide a lot of functions to fit your needs. The following information is indicated on the screen:



Fig. 18 Main Display

Headlight display: Displays the on/off status of the headlights, and displays the logo when the system headlights are on;

Maintenance reminder: Display maintenance reminder sign;

Navigation function: The mobile app connects to the Bluetooth of the instrument, and the instrument displays the logo when the mobile app starts navigation

Bluetooth function: Bluetooth on/off status display, and the logo will be displayed after successful connection to the instrument Bluetooth ;

Power reminder: prompt the real-time power;

Real-time speed display: display the real-time speed value;

Gear display: displays the current gear;

Single mileage: Displays the mileage of this ride;

Accumulated mileage: Displays the accumulated mileage

Average riding speed: displays the average riding speed of this time;

Button Definitions:



Fig. 19 Buttons

3.4.2 General Operation

Switching the e-bike System On/Off

To switch on the e-bike system: hold the POWER button until the display powers on. In the same way, hold the POWER button to switch the system off.

Password

After Switching on the display, the console will ask you to key in your password. If you have not set a password yet, the default is "0000".

NOTE: AFTER 10 MINUTES OF INACTIVITY THE E-BIKE SYSTEM SWITCHES OFF AUTOMATICALLY.

Battery Indicator

This icon in the top right corner represents the capacity of the battery. When the battery is very low the battery icon will flash, meaning immediate charging is required.



Fig. 19 Battery Indicator

NOTE: Avoid running the battery completely flat as this will shorten its life. If the battery icon starts flashing while you are riding, immediately turn the system off and ride manually.

Selecting Assistance Level

Assistance levels indicate the output power of the motor. The default value is level "0", and outputs no power. The power ranges from level "0" to level "5". Level "1" is the lowest power output while level "5" is the maximum power. To

change the assistance level, press "+" or "-" buttons to increase or decrease until the desired assistance level is displayed.



NOTE: Throttle mode will not activate when the Assistance level is at "0"



Fig. 22

Switching the Lighting On/Off

To switch on the display backlight and headlights/tail lights of the e-bike, press and hold the "+" button until the light switches on. Press and hold the "+" button again to shut off the lights; the lights will not shut off immediately, but the headlight logo on the console will dim and the lights will follow.



Fig. 21 Lighting-On Indicator

Walk-assist mode

To access the walk-assist mode, hold the "-" button and keep holding it down. After a couple seconds the e- bike will move forward at a uniform speed of 5 Km/h. The Walk-Assist symbol is shown under the PAS level. The walk-assistance function switches off as soon as you release the "-" button.



Fig. 22 Walk-assistance mode

3.5 Bluetooth and App

3.5.1 Installing the App

In order to make full use of the bluetooth and navigation functions for the Tetsu, you will need the free App that can be downloaded by scanning the QR code included in the box. After the app is installed, when the software is opened for the first time, the software will ask for permissions. The related functions can be used normally only after the permissions are granted.



Pairing To Pair the App, press the Power button once to enter the settings menu. Then use the "+" or "-" buttons to 1. navigate to the Bluetooth Setting. SETTING Bluetooth **Display Setting** Information MAC 0A:5B:00:86:62:61 Language Themes Password EXIT 2. Open the App and hit the New Bike button. This will open the Camera which you will use to scan the QR code on the screen. If the external environment is relatively dark, you can tap "click to switch the flash" to turn on the flash sion request requesting Use carr missions. Allow?

New Bike



3.5.2 App Interface



• New Bike: pair new device

- Setting Menu: APK device settings
- Bluetooth Connection: Bluetooth connection status display
- Device List: Binding device list and switching list
- Trip: single mileage
- Speedometer: Display the current real-time speed
- Odometer: Total mileage display
- **Power display:** View the device battery display
- Headlight: Headlight switch display status and switch operation
- Cycling Time: Shows the total length of the ride
- Max Speed: Display of maximum speed during the current ride
- Average Speed: Average speed value display during riding
- GO: Cycling navigation details and navigation settings



Pair Multiple Bikes

The App supports pairing with multiple devices, and the operations are shown in the steps in "Pairing". After adding multiple devices, you can view them in the meter device list as shown, however, the app can only control one bike.



3.5.3 Navigation

- 1. On the App, tap the "GO" button at the bottom of the app, which will bring up the Map screen.
- 2. The Map will zone in to your current location.
- 3. Type in your address in the "Where To?" box and hit the "Navigate" Button to start the navigation.



The Full Map will be displayed on the phone app, and if the app is connected to the Tetsu, then the Tetsu's display is going to show the following screen:



Fig. 2X Navigation Display (Console)

While the screen does not display the map, it displays when the next turn will be and how far away it is from the current location. The screen will also show the next turning prompt, the current travel speed, distance currently traveled on the trip, and the remaining distance to the Destination.

3.5.4 Settings

Click the Settings button in the upper right corner of the main interface of the App to enter the settings menu.



- A. Unpair bike: Unpair the currently connected device
- B. Bike Nickname : Editable nickname you can give your bike
- C. Msg Notification : Connect the device to enable push notifications
- D. Privacy Policy : View Privacy Policy
- E. Terms of Service : View User Agreement
- F. Screen Brightness : Adjust the backlight brightness of the currently connected device
- G. BT Unlock Level: Adjust the current Bluetooth unlocking range, 1 is the nearest, 5 is the farthest
- H. Speed Unit: Adjust the unit display of the currently connected device (units are: metric and imperial)
- I. Assistant Level: Adjust the gear size of the currently connected device (the gear adjustment range is: 1~5)
- J. Update firmware by BLE: Bluetooth OTA upgrade current device version through differential package
- K. Exit : Exit app

3.6 Console Settings

Press the "Power" key to enter the setting information list. Use the "+" or "-" key to move the cursor up and down to select the following:

- "Display Setting"
- "Information"
- "Language"
- "Themes"
- "Password "
- "Bluetooth "
- "Exit"

Click the "Power" button to enter. The function selection interface is shown in the figure below.



3.6.1 Display Settings

Display Settings encompass the following:

- Unit: Change Speed display between Metric and Imperial Measurements
- Auto Off: Creates custom time for display to shut off automatically
- Trip Reset: Resets the elapsed trip distance.
- Brightness: Sets the Brightness of the console display
- Max PAS: limit maximum motor assistance.
- Light Sensitivity: Brightness of the LED lights
- BT Rssi Level: The range from which you can unlock your bike's motor. 1 is close, 5 is far.



3.6.2 Information View



- Wheel Size: Set the size of your wheels for better calculations of speed and distance traveled.
- Speed Limit: Speed Limit function has been disabled.
- Display info: Shows the Console's information serial number and model number
- Battery Info: Battery information cannot be adjusted.
- Error Code: Records up to ten errors for review. Switch by short pressing "+" or "-". The error code "00" means no error. For the meaning of other codes, please refer to the error code definition table.

3.6.3 Themes Menu

The Themes menu provides 4 different background themes for the Console Display.

3.6.4 Set Password

Set and modify password - click the "Power" key to enter the setting information list.

- 1. Use the "+" or "-" key to move the cursor up and down, select the "Password" option and click "Power" to confirm. Enter the Password option interface, select "Reset Password" with the cursor and click "Power" to confirm.
- 2. The interface prompts "Please enter your old password ". At this time , use the "+" or "-" key to switch the numbers "0-9" and click "Power" to switch the digits .
- 3. After entering the password, the interface prompts "Please enter your password". At this time, use the "+" or "-" key to switch the numbers "0-9" and click "Power" to switch the digits.
- 4. After entering the password, the interface prompts "Please confirm your password". At this time, use the "+" or "-" key to switch the numbers "0-9" and click "Power" to switch the digits.



Bluetooth Unlock: Bluetooth Unlock is active by default, but this function can disable it if necessary

4. PREPARATION FOR RIDING



4.1 ADJUSTMENT FOR RIDER SIZE

The diagram above shows the recommended body position for safe and comfortable riding (the knee should be slightly bent at full extension). Please refer to section 2.3.3 for instructions on how to adjust the seat position.

4.2 TIRE PRESSURE

Rider weight, weather conditions, and terrain all affect the optimal tire pressure of your TETSU e-bike. A heavier rider, for example, will require a higher pressure. Uneven roads or wet conditions are more suited to lower pressures, which will offer better traction. Please note that lower pressures cause more drag and increase the chance of punctures. A tire pressure between 40-45 psi (241-310 kPa) will suit most scenarios.

WARNING: THE MAXIMUM RECOMMENDED TYRE PRESSURE IS 60 PSI (414 kPa). DO NOT INFLATE TYRES ABOVE THIS PRESSURE.

5. HANDLING GUIDE

5.1 RIDING SAFELY

WARNING: TO SAFELY OPERATE YOUR NEW E-BIKE, PLEASE ADHERE TO THE FOLLOWING POINTS:

- 1. ADHERE TO ALL TRAFFIC REGULATIONS
- 2. FOR YOUR OWN SAFETY, ALWAYS WEAR AN APPROVED HELMET WHILE RIDING
- 3. MAKE SURE TYRES ARE PROPERLY INFLATED BEFORE RIDING
- 4. MAKE SURE BRAKES ARE OPERATING PROPERLY BEFORE RIDING
- 5. BE AWARE THAT BRAKING DISTANCES INCREASE CONSIDERABLY IN WET CONDITIONS
- 6. PLEASE NOTE THAT YOUR E-BIKE IS DESIGNED TO CARRY ONLY ONE PERSON
- 7. PLEASE ENSURE YOUR FEET CAN REACH THE GROUND WHILE SEATED ON YOUR E-BIKE. IF NOT, LOWER THE SEAT HEIGHT ACCORDINGLY
- 8. KEEP IN MIND THAT OUTSIDE TRAFFIC MAY UNDERESTIMATE THE SPEED OF AN E-BIKE
- 9. RIDE WITH BOTH HANDS ON THE HANDLEBARS WHEN NOT SIGNALLING A TURN
- 10. RIDE AS DEFENSIVELY AS POSSIBLE.

5.2 GENERAL RIDING INSTRUCTIONS

There are three modes for riding your Tetsu e-bike:

1. Fully Manual:

Pedal without engaging the motor

2. Pedal Assist System (PAS):

The motor assists the rider while the rider is pedalling. Using PAS also increases the distance travelled on one charge as the motor is not drawing on as much current.

3. Throttle:

The motor propels the rider forward without using the pedals.

To ride the bike manually:

Mount the bike and begin pedalling. The e-bike operates completely like a normal bicycle. There is no need to turn on the battery or the display, unless you are riding at night. In this case you must turn on the battery and display to press the light button, which operates the front light.

Using Pedal Assist:

Switch on the main power switch on the battery. Press and hold the "MODE" button for 2 seconds to turn on the display. Select any one of PAS levels 1-5 by pressing the "+" button. When you are ready to cycle, start pedaling. The torque sensor in the crank will detect that force has been applied and the motor will automatically activate to amplify the applied force. The level of assistance applied by the motor depends on which level of PAS is selected on the display control.

Using the throttle:

- 1. Turn on the battery and display. Select PAS level 1-5 (At PAS level "0" throttle will not work).
- 2. Push the thumb throttle gently forward to engage the motor, pushing further to increase speed and releasing to reduce speed.

WARNING: WHEN PARKING YOUR E-BIKE REMEMBER TO TURN THE POWER OFF AND REMOVE THE KEY LOCKING THE BATTERY CASE. THIS WILL PREVENT SUDDEN MOVEMENT OF THE BIKE THROUGH ANY ACCIDENTAL ACTIVATION OF THE THROTTLE.

NOTE: To extend the range and life of the battery, pedal the bike manually to get it started before using the throttle.

Shifting Gears

To optimize the range of your e-bike it is recommended to shift gear according to speed. For low speeds and starting off: a low gear is best. The higher the speed the higher the gear that can be chosen. For a smooth gear change and optimum range it is best to release pedal pressure while changing gears.

There are two levers for selecting gears - a thumb activated one - which you press to lower the gearing and a forefinger one which you pull for increasing the gearing. The selector will indicate which gear you are in (1 = lowest gear, 7 = highest gear).

NOTE: Ensure you are pedalling while shifting gears. Not doing so may cause the chain to fall off the gears.

6. MAINTENANCE

Your TETSU e-bike should only require the same level of servicing as a normal derailleur bicycle (the electronic parts are designed so they don't require any regular servicing).

WARNINGS:

- BEFORE CARRYING OUT ANY SORT OF MAINTENANCE ENSURE THAT POWER SWITCH IS TURNED OFF AND THAT KEYS ARE REMOVED
- THE ELECTRICAL COMPONENTS ON THE BIKE ARE NOT USER SERVICEABLE. PLEASE DO NOT ATTEMPT ANY REPAIRS AS IT COULD CAUSE INJURY AND WILL AFFECT WARRANTY .
- ANY SIGNIFICANT MECHANICAL REPAIRS SHOULD BE CARRIED OUT BY A SKILLED BICYCLE MECHANIC.

6.1 ROUTINE MAINTENANCE

CHECKS

As a minimum, your e-bike should undergo an annual check-up on all the mechanical parts. Use a bicycle mechanic if you are not confident to do this yourself.

LUBRICATION

To keep your e-bike in good working condition you should lubricate the following parts every 3-4 months:

- Chain
- Front and rear axles
- Cassette
- Front forks.

CLEANING

Wipe down your e-bike to keep clean after each use. Clean using a mild detergent and sponge. Avoid using a steady direct stream of water on the electrical parts (battery, electric cables, handlebar controls etc.). Dry off and buff with a soft cloth.

WARNINGS:

- 1. WHILST THE ELECTRICAL PARTS ARE WEATHERPROOF, THEY SHOULD NEVER BE SUBMERGED IN LIQUID.
- 2. DON'T USE A HIGH PRESSURE WATER BLASTER TO CLEAN YOUR E-BIKE THIS MAY CAUSE WATER TO ENTER THE ELECTRICAL SYSTEM

7. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Display doesn't light up, the motor doesn't work, or there is no electric power to the bike.	 Battery is completely discharged One of the electrical cable connections is loose or damaged 	 Charge the battery Check all connections are firm and that there are no damaged cables
E-bike range is diminished	 Insufficient battery capacity Battery is getting old and depleted Riding uphill for long stretches, braking frequently or riding against the wind 	 Charge the battery Replace the battery Provide more manual assistance
Charger indicator doesn't light up when battery plugged in	 Connecting cable is loose Charger has malfunctioned 	 Check connection is firm Replace the charger
Error code shows on display		Refer to the table below. Contact Bikes for further assistance
Any other issues		Contact LN Motion for further assistance

Error code comparison table

Error Code	Fault Description	Troubleshooting Methods
"02 "	Brake handle failure	Stop riding and check whether the brakes are in place and whether there is any damage.
"04"	The speed control handle is not in place	Check whether the speed control handle is in place
"05"	Speed regulating failure	Check the speed control handle
"06 "	Undervoltage protection status	Check the battery voltage

"07"	Overvoltage protection	Check the battery voltage
"08"	Motor Hall signal line failure	Check the motor module
"09"	Motor phase fault	Check the motor module
"10"	The temperature inside the motor is too high	Check the motor
"11"	Motor temperature sensor failure	Stop riding
"12"	Current sensor failure	Check the controller
"13"	Battery internal temperature fault	Check the battery
"14"	The temperature inside the controller is too high	Check the controller
"15"	Controller temperature sensor failure	Stop riding
"16 "	Controller failure	Stop riding
"17 "	Braking abnormality	Stop riding and check whether the brakes are in place and whether there is any damage.
"21"	Bafang: Speed sensor failure K M5S : Abnormal current	Bafang: Check the speed sensor installation position KM5S: Check controller plugin
"22 "	K M5S : abnormal turning handle	Check the speed control handle
"23"	K M5S : Motor phase loss	Check the motor
"24 "	K M5S : Motor Hall abnormality	Check the motor
"25"	Bafang: Torque sensor torque signal failure KM5S : Braking abnormality	Bafang: Check torque K M5S : Stop riding
"26"	Torque sensor speed signal failure	Check torque
"29 "	Controller communication failure	Check the controller connector
"30"	Instrument communication failure	Check the controller connector
"27"	Controller overcurrent	Check the controller

"33"	Brake detection circuit failure	Check the controller
"35"	15V power supply detection fault	Check the controller
"36"	Key detection circuit failure	Check the controller
"37"	Watchdog Failure	Check the controller
"61"	Transmission stuck	Check the transmission
"62"	The transmission cannot be reset	Check the transmission
"81"	Bluetooth module failure	Check Bluetooth
"41"	Total voltage is too high	Check the battery
"42"	Total voltage is too low	Check the battery
"43"	Total current is too large	Check the battery
"44"	Monomer voltage is too high	Check the battery
"45"	Overtemperature (battery)	Check the battery
"46"	Temperature too low (battery)	Check the battery
"47"	SOC is too high (battery)	Check the battery
"48"	How low is the SOC (battery)	Check the battery
"71"	Electronic lock stuck	Check the electronic lock

8. WARRANTY

The Warranty for your Tetsu e-bike protects against the following material or manufacturing defects:

• All Parts - 12 Months

If extended at time of purchase, all parts are covered for 36 months.

NOTE: Warranty does not cover normal wear and tear, shipping damage, alterations, modifications, misuse, neglect or abuse.