



Read all information in this manual carefully  
before you start riding your E-bike



**BRERA**

*Pedal assisted bike*

*City Urban integrated battery*

**UPTIME**

## USER MANUAL AND MAINTENANCE

**CAUTION**

Please read all information in this manual carefully before riding this bicycle

**Before using your new E-bike, read all the information in this manual. The warranty of good performing and safety is strictly connected to all instructions contained in this manual.**

This E-bike confirms to the specifics and technical instructions listed in the manual on its release date. In the future there could be even relevant technical updates also relevant, not reported in this manual. For the most updated information always consult MANDELLI S.r.l.

**Rev. 0 October  
2023 Original  
instructions**



# TABLE OF CONTENT

<b>1</b>	<b>PREFACE</b> .....	<b>6</b>
1.1	GENERAL STATEMENT.....	6
1.1.1	<i>Use of the manual</i> .....	6
1.1.2	<i>Manufacture and technical assistance</i> .....	6
1.1.3	<i>Safety symbols</i> .....	7
<b>2</b>	<b>SAFETY NORMS</b> .....	<b>8</b>
2.1	GENERAL SAFETY RULES.....	8
2.2	RESPONSABILITY.....	8
2.3	WARNINGS FOR USERS.....	9
2.4	WARININGS FOR MAINTENANCE.....	10
2.5	ADDITIONAL WARNINGS.....	11
2.6	UNBOXING AND TUNE UP.....	11
<b>3</b>	<b>BIKE DESCRIPTION</b> .....	<b>14</b>
3.1	FRAME AND CODE NUMBER IDENTIFICATION.....	14
3.1.1	<i>CE Marking</i> .....	14
3.2	GENERAL DESCRIPTION.....	15
3.3	TECHNICAL SHEETS.....	17
3.4	BRAKE LEVERS.....	22
3.5	ASSISTANCE DISPLAY AND USE.....	22
3.5.1	<i>Commands</i> .....	22
3.5.2	<i>Change of indications</i> .....	25
3.5.3	<i>Assistance levels</i> .....	26
3.5.5	<i>Malfunction code</i> .....	27
3.6	ASSISTANCE ACTIVATION.....	32
3.7	ASSISTANCE ACTIVATION AT STARTING / WALKING.....	33
3.8	GENERAL REGULATIONS.....	34
3.8.1	<i>Display set up</i> .....	35
3.9	BATTERY.....	39
3.9.1	<i>Battery installation/removal</i> .....	39
3.9.2	<i>Battery charge status</i> .....	40
3.9.3	<i>Battery charge</i> .....	40
3.10	HEAD LIGHT AND RARE LIGHT.....	41
3.11	SUSPENSIONS.....	41
3.12	TROUBLESHOOTING.....	42



<b>4</b>	<b>TERMS OF USE AND ENVIRONMENT</b>	<b>44</b>
4.1	TERMS OF USE	44
4.2	ENVIRONMENT	44
4.3	INCORRECT USE AND WARNINGS	45
<b>5</b>	<b>UPLIFTING AND TRANSPORTATION</b>	<b>47</b>
5.1	UPLIFTING	47
5.2	TRANSPORTATION	47
<b>6</b>	<b>FIRST RIDE</b>	<b>48</b>
6.1	BATTERY CHARGE	48
6.2	PRELIMINARY CHECK	49
6.2.1	<i>Control device</i>	49
6.2.2	<i>Wheels</i>	49
6.2.3	<i>Brake system</i>	50
6.2.4	<i>Frame, handlebar and saddle position</i>	50
6.2.5	<i>Brake and suspension setting</i>	51
6.2.6	<i>Lighting</i>	51
<b>7</b>	<b>BIKE USAGE</b>	<b>52</b>
7.1	RIDING YOUR BIKE	53
7.2	BRAKING SYSTEM	53
7.3	PARKING	54
<b>8</b>	<b>MAINTENANCE</b>	<b>55</b>
8.1	GENERAL RULES	55
8.2	MAINTENANCE AND DAILY INSPECTION	56
8.2.1	<i>Frame and pictogram inspection</i>	56
8.2.2	<i>Wheels inspection</i>	56
8.2.3	<i>Brake cables inspection</i>	56
8.3	MAINTENANCE AND MONTHLY INSPECTION	57
8.3.1	<i>Cleaning</i>	57
8.3.2	<i>Lubrication and chain tension inspection</i>	57
8.3.3	<i>Frame and bolts inspection</i>	58
8.4	MAINTENANCE AND MONTHLY INSPECTION	58
8.4.1	<i>Electric components and circuits inspection</i>	58



9	TECHNICAL ASSISTANCE AND SPARE PARTS .....	59
10	WAREHOUSE STORAGE.....	60
11	COMPONENTS AND MATERIALS DISPOSAL .....	61
12	WARRANTY .....	62



# 1 PREACE

## 1.1 *General statement*

This manual constitutes an integral and essential part of the pedal assisted bicycle, **City urban integrated battery** model and must be delivered to the user.

Before riding the bike, it is essential that users read, understand and scrupulously follow the following instructions.

*The manufacturer is not liable for damages caused to people and/or things or to pedal assisted bicycles if they are used incorrectly with respect to the given instructions.*

Considering the continuous technological development, the manufacturer reserves the right to modify the **pedal assisted bicycles** without notice, without this manual being automatically updated.

### 1.1.1 Use of the manual

The Use and Maintenance Manual is an integral part of pedal assisted bicycles; it is therefore necessary to keep it intact and in a safe place throughout its entire life. This manual must always be available to the user.

### 1.1.2 Manufacturer and technical assistance

#### **MANDELLI S.r.l.**

Via Tommaso Grossi, 5 – 20841 Carate Brianza (MB)

Tel. +39 03621797800

E-mail: [info@mandelli.net](mailto:info@mandelli.net) – Web: [www.mandelli.net](http://www.mandelli.net)

For any inconvenience or clarification request, you can contact the Assistance Service, which has competent and specialized staff, specific equipment and original spare parts.



### 1.1.3 Safety symbols

The following graphic symbols will be used to identify the safety messages in this manual. They have the function of attracting the attention of the reader / user with the purpose of a **correct** and **safe** use of the pedal assisted bicycle.


	<b>CAUTION</b>	<b>Caution</b>
<b>Highlights behavioral rules to be followed in order to avoid a damage to the pedal assisted bicycle and/or the onset of dangerous situations.</b>		


	<b>DANGER</b>	<b>Residual risks</b>
<b>Highlights the presence of hazards that cause residual risks. The user must pay attention to avoid injuries or material damage.</b>		



## 2 SAFETY NORMS

### 2.1 General safety rules

	<b>CAUTION</b>	<b>Use of the pedal assisted bicycle</b>
<b>Every user must read the instruction manual; in particular, the chapter on safety instructions.</b>		

	<b>CAUTION</b>	<b>Risks connected to the use of the pedal assisted bicycle</b>
<ul style="list-style-type: none"><li>• <b>Despite the presence of safety devices, for a safe use of the pedal assisted bicycle you must take note of all the prescriptions related to the prevention of accidents reported in this manual.</b></li><li>• <b>Always stay focused while riding and DO NOT underestimate the residual risks associated to the use of a pedal assisted bicycle.</b></li></ul>		

Even if you are already familiar with the use of pedal assisted bicycles, it is necessary to follow the given instructions, in addition to the general precautions to be observed when driving a two-wheeled vehicle. In particular:

- Acquire a full knowledge of the pedal assisted bicycle;
- Read the manual carefully to learn about operation, safety devices and all necessary precautions. All this will lead to a safe use;
- Maintain your pedal assisted bicycle with care.

### 2.2 Responsibility

Failure to comply with the operating instructions and safety requirements contained in this manual exempts the manufacturer from any liability. If the maintenance of the pedal assisted bicycle





does not comply with the instructions provided, with non-original spare parts or, in any case, in such a way that compromise its integrity or modify its characteristics, the manufacturer will be relieved of any responsibility relating to the safety of people and the faulty functioning of the pedal-assisted bicycle.



### CAUTION

### Unauthorized modifications

**If you hear any unusual noises, or feel anything strange, stop the pedal assisted bicycle immediately. Then carry out a check and, if necessary, contact the Service Assistance.**

For any information not understood or not deducible from this manual, it is recommended to directly consult the Assistance Service.

## **2.3 Warnings for users**

1. Additional passengers are forbidden.
2. It can only be used by experienced adults and children.
3. Do not take alcohol or drugs before riding the electric bicycle.
4. These pedal assisted bicycle models are designed and built to be used outdoors, on roads and in private and public environments.
5. Do not ask the pedal assisted bicycle to over perform.
6. Never ride the pedal assisted bicycle with removed parts.
7. Avoid uneven surfaces and obstacles.
8. Ride with both hands on the handlebars.
9. Replace worn and/or damaged parts, check that the protections work correctly before use.



## 2.4 Warnings for maintenance

1. Any maintenance work must be carried out with the battery disconnected.
2. During each maintenance phase, operators must be equipped with the necessary accident prevention equipment.
3. The tools used for the maintenance must be suitable and of good quality.
4. Do not use petrol or flammable solvents as detergents, but always use non-flammable and non-toxic solvents.
5. Limit the use of compressed air for cleaning (max 2 bar) and protect yourself with glasses with side shields.
6. Never use naked flames as a means of lighting when carrying out inspection or maintenance operations.
7. After any maintenance or adjustment work, make sure that no tools or foreign bodies remain between the moving parts of the pedal assisted bicycle.



**CAUTION**

**Original spare parts**

**Use exclusively original spare parts supplied by MANDELLI S.r.l. Any liability of the Manufacturer is excluded for damage or loss of functionality caused by the use of non original accessories and spare parts.**



## 2.5 Additional warnings

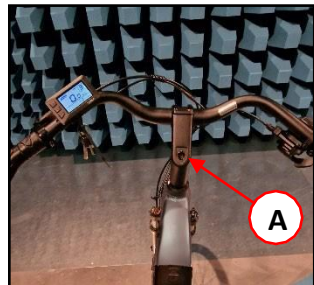
*The first thing to do when starting use the bike is to check the presence and integrity of the protections and the functioning of the safety devices. If you notice any defects, do not use the pedal assisted bicycle!*

	<b>DANGER</b>	<b>Protections</b>
<b>It is therefore strictly forbidden to modify or remove protections, control parts, labels and EU plates</b>		

## 2.6 Unboxing and tune up

The pedal-assisted bicycle is delivered almost completely assembled. To correctly assemble the pedal-assisted bicycle, proceed as follows:

1. Open the bicycle packaging box, paying attention to its opening direction. Open the box upper part, in order not let the content fall.
2. Remove the content (pedal-assisted bicycle, battery, battery charger and accessories) from the packaging
3. Unscrew the securing screw of the handlebar stem to the head tube (Ref. A in Figure 1



**Figure 1 – Securing screw handelbar stem.**



4. Rotate the handlebars while holding the front wheel until it is perpendicular to the front wheel. At this point, fix it by screwing the screw on the head tube (Ref. A in Figure 1), on the upper part of the fork steerer tube.
5. Unscrew the four screws on the handlebar connection and rotate the handlebar to the desired position. Once the handlebar has been adjusted, fix the four screws (Ref. B in Figure 2).

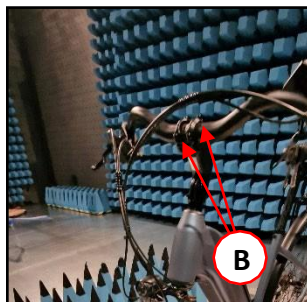


Figure 2 – Fixing screw and handlebar rotation.

6. Adjust the height of the handlebar using the appropriate adjustable tube. Unscrew the two fixing screws, adjust the height and tighten the screws again (Ref. C Figure 3).

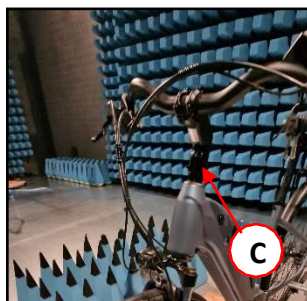


Figure 3 – Handlebar height regulation.

7. Adjust the position of the brake levers so that they are in a suitable position and easily reachable by the user.
8. Install the two pedals, screwing them onto the threaded holes on the two cranks. Be careful to install the pedals in the same direction of the pedalling rotation.
9. Check that the battery is perfectly fixed and locked.



**CAUTION**

## Assembly

**If you do not have the appropriate assembly tools or do not have the skills to correctly assemble the vehicle, contact an authorized Mandelli S.r.l center**



## 3 BIKE DESCRIPTION

### 3.1 Frame and code number identification

Make sure the license plates are perfectly legible. Otherwise, apply a new one after requesting it to **MANDELLI S.r.l.**

#### 3.1.1 CE Marking

The following data are shown on the CE plate applied to the pedal-assisted bicycle:

- Manufacturer data;
- Model;
- Year of construction;
- Unladen mass (kg);
- Maximum capacity (kg);
- Engine Power (W);
- Maximum assistance speed (km/h);
- Serial number;
- Battery model and technical data.

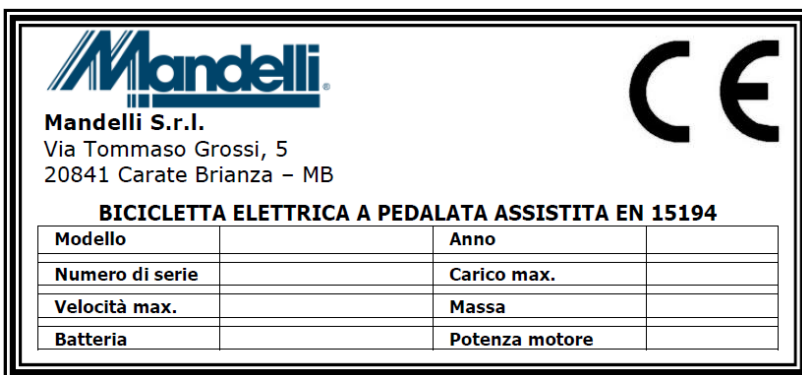



Figure 4 – Sample of identification plate



### 3.2 General description

The pedal-assisted bicycle is designed and built to be used outdoors, on roads and in private or public environments.

In particular, the components and the specific pedal-assisted bicycle allow you to tackle routes with asphalted surfaces or with similar characteristics without roughness.

	<b>DANGER</b>	<b>Incorrect and unintended use</b>
<b>The bicycle was designed and built for the specified use; a different use and the non-compliance with the technical parameters established by the Manufacturer may constitute a dangerous condition for the users.</b>		

This bicycle is very similar to a muscular bicycle, with the front set with the brake levers at the ends, the saddle in the central part, on which you can sit and operate the pedals. The pedal-assisted bicycle is equipped with a rechargeable battery and an electric motor, whose intervention occurs only when pedalling and progressively slow down as the speed of the vehicle approaches 25 km/h, and then stops completely when this speed is reached. To manage the assistance system there is a special control device located next to the left grip on the handlebar.

On the right side of the handlebar there is the control system for selecting the ratios of the rear gear.

The bicycle is available in two similar frames, which differs in the shape that allows the access to the saddle more or less easily; the technological characteristics of the bicycle are identical.

The 200280020 version is equipped with a low top tube which allows you to get on and off the bike very quickly.

The 200280025 version is equipped with a raised top tube, with a fluid assistance on a multitude of routes.



The upright position and the grips with palm rest reduce the pressure on the hands and guarantee excellent visibility to pedal into busy streets. The mudguards protect from water and dirt and the luggage rack allows you to install the child seat or load small objects. It is equipped with a reliable long-life battery that allows you to cover long distances with a single charge. The wide and stable tires offer comfort for urban travel and trips out of town.

The tires allow to travel on asphalt roads and light off-road ground. There is also a low-speed movement function that can be activated with a specific manual control. It allows the bicycle to move at walking speed for parking movements or to push uphill with the driver alongside the bicycle.





### 3.3 Technical sheet

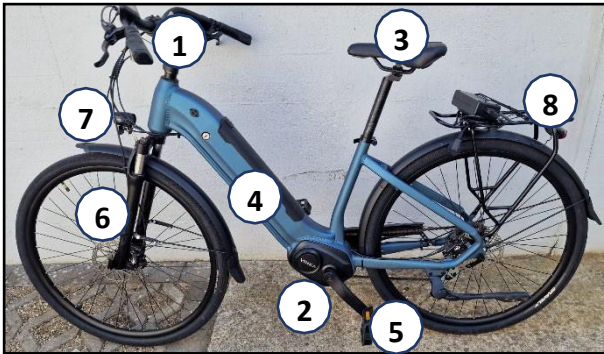


Figure 5 – Description of some pedal assisted bike details.

RIF.	DESCRIPTION	RIF.	DESCRIPTION
1	Handelbar and commands	5	Pedals
2	Engine	6	Front fork
3	Saddle	7	Front light
4	Battery	8	Luggage carrier and back light



ELECTRIC COMPONENTS	
DETAIL	DESCRIPTION / VALUE
Model	E40
Voltage	36 V
Power	250 W
Cadence and torque sensor	Integrato
Effective torque	60 Nm
Maximum torque	80 Nm
Max cadence support	110 rpm
Mechanical decoupling resistor	-
Dimension	197×139×107 mm
Weight	3,4 kg
Temperature	-20~45 °C
IP rate	65
Assistance percentage	1° 11% 2° 23% 3° 46% 4° 77% 5° 100% + Auto

BATTERY	
DETAIL	DESCRIPTION / VALUE
Model	GX21
Voltage	36 V
Charge	15 Ah 540 Wh
Cells	Samsung 2170
Battery charger	36 V 2 Ah
Recharge timing	8 hours
Autonomy	till 80 km



DISPLAY	
DETAIL	DESCRIPTION / VALUE
<b>Model</b>	DR23
<b>Tension</b>	36 V
<b>Screen</b>	LCD white / black
<b>Screen dimension</b>	2,2" back lit
<b>Dimension</b>	81 x 48 mm
<b>Functions</b>	Battery level, assistance level, current speed, average/max speed, partial/total distance, error code, assistance on foot
<b>Working temperature</b>	-20~60 °C
<b>IP degree</b>	65



200280020	
DETAIL	DESCRIPTION / VALUE
Chassis	Aluminium low top tube
Size	700C x 44 – 700C x 48
Fork	Cushioned aluminium MLO
Brake	Hydraulic disc 160 mm
Brake levers	Aluminium
Rim	Aluminium double tube with eyelets
Shifter	Shimano Altus 8V
Control gear	Microshift
Handlebar bend	Aluminium confort
Handlebar stem	Aluminium intergated Hi-Set
Seatpost	Aluminium
Cassette	8 Speed IATA no sound
Crankset	Vinka 38T with carter
Lights	6 V from display
Accessories	Kickstand, luggage rack, ergonomic knobs
Tyres	700x400 (42-622) Gravel
User max weight	100 kg
Weight	25,5 kg



200280025	
DETAIL	DESCRIPTION / VALUE
Chassis	Aluminium man /high
Size	700C x 52
Fork	Cushioned aluminium MLO
Brake	Hydraulic disc 160 mm
Brake lever	Aluminium
Rim	Aluminium double tube with eyelets
Shifter	Shimano Altus 8V
Contoril gesr	Microshift
Handlebar bend	Aluminium confort
Handelbar stem	Aluminium integrated Hi-Set
Seatpost	Aluminium
Cassette	8 speed IATA no sound
Crankset	Vinka 38T with chain guard
Lights	6 V from display
Accessories	Kickstand, luggage rack, soft confort knobs
Tyres	700x400 (42-622) Gravel
User max. weight	100 kg
Weight	25,5 kg



### 3.4 Brake lever

The brake levers are located on the handlebars of the pedal-assisted bicycle, near the grips. These systems allow you to control, via hydraulic control, the disc brake calipers, located on the wheel hub. The right lever controls the rear brake, the left one the front brake; the braking action is proportional to the force applied on the lever.

### 3.5 Assistance display and use

To manage the assistance system there is a black and white display on the left side of the handlebar. This device allows you to vary the assistance level of the system, turn the lights on or off and view information regarding the battery and route status.

#### 3.5.1 Commands

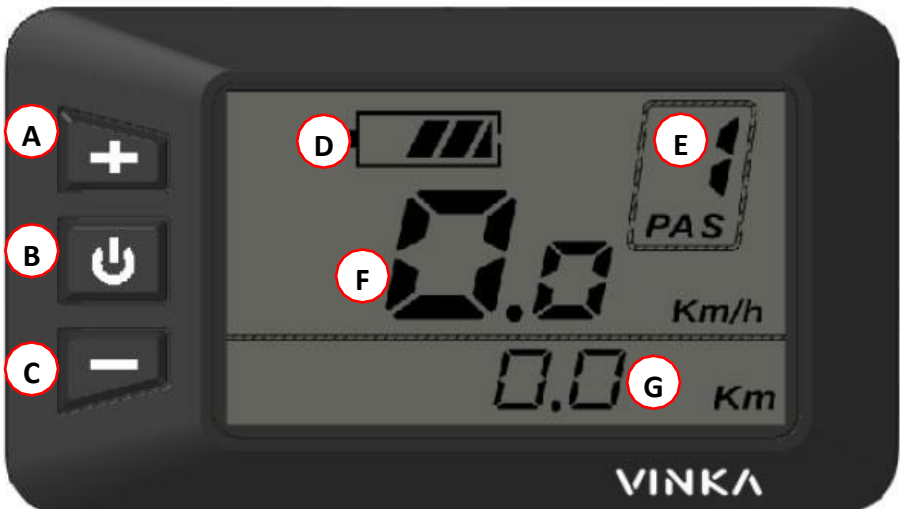
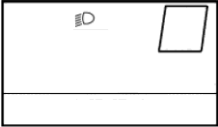

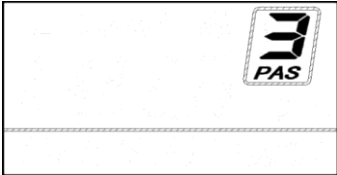


Figure 6 – Assistance display with the main functions.



SECTION	FUNCTION
A	<p><b>Button +</b></p> <p>Press the button once to increase the assistance intensity.</p> <p>Hold the button pressed (1 s) to turn the front and rear lights on and off; at the same time the display light fades and the light reported in the following picture tuns on.</p> 
B	<p><b>Button ON/OFF</b></p> <p>Press the button (1 s) to turn the assistance system on or off. First the display shows the current speed and the distance.</p> <p>When the bicycle remains unused for 15 minutes the assistance management system turns off.</p> <p>Press the button to move to another function.</p> <p>Read the manual for further instructions.</p>
C	<p><b>Button –</b></p> <p>Press the button once to decrease the intensity of assistance.</p> <p>Hold the button pressed to turn on the walk/start assist function. The function works as long as you hold the button.</p> <p>Read the manual for further info on the pedal assistance and the assistance at walking.</p>



SECTION	FUNCTION
D	<p><b>Battery charge status indicator</b></p> <p>The five stripes show the battery charge status; the lighted up stripes shows the charge, as the battery decrease the charge, the stripes reduce. As the battery runs out the illuminated bars decrease, when there are no illuminated bars and the outside of the bars flashes, it is necessary to recharge the battery, as shown in the following image.</p>  <p>Flash Flash (low voltage)</p>
E	<p><b>Pedalling assistance level indicator</b></p> <p>The assistance level indicator shows which level is currently selected, in the following image it is shown, for example assistance level 3.</p>  <p>The assistance level can always be changed, even while driving. The assistance level can vary from 0 to 5: 0 corresponds to no assistance and 5 to maximum assistance. The default assistance level is 1; level 0 corresponds to no assistance.</p>
F	<p><b>Current speed indicator</b></p> <p>The speed indicator shows the speed you are traveling at in km/h.</p>





SECTION	FUNCTION
G	<b>Textual indicator</b> The text indicator shows a text which can be the distance travelled (total or partial) or the engine power, depending on the selection. When the distance is selected, with the display on, to reset the distance of the route, press the + and – buttons at the same time for at least 1 s to reset.

### 3.5.2 Change of the indications

With the display on, press the ON/OFF button to switch from one indication to another, as shown below.

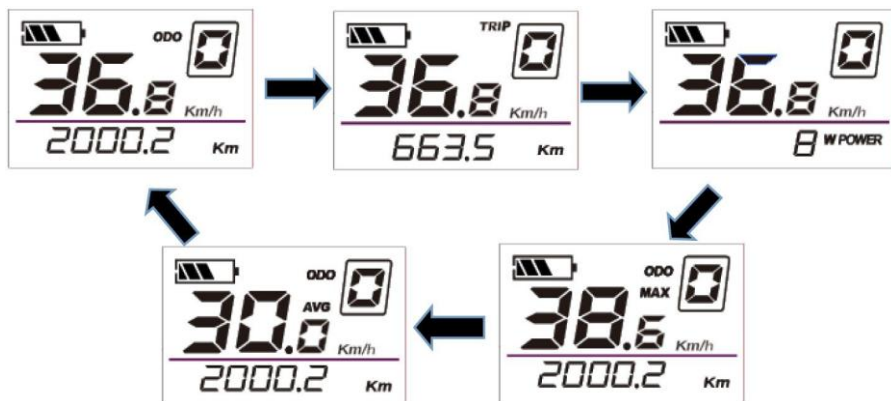


Figure 7 – Main indications on the display.

ODO (total km) → TRIP (partial km) → W POWER (engine power) → MAX (max reached speed) → AVG (average velocity) → ODO, back to the beginning.

On the TRIP screen, to reset the count, press the + and – buttons simultaneously.



There is also a TIME indication which shows the travel time since the last reset.

On the TIME screen, to reset the count, press the + and – buttons simultaneously.

### 3.5.3 Assistance levels

To know the exact intensity of assistance, based on the selected value, see the table below.

LIVELLO	DESCRIZIONE
Level 0	No assistance
Level 1	11% Assistance
Level 2	23% Assistance
Level 3	46% Assistance
Level 4	77% Assistance
Level 5	100% Assistance



#### CAUTION

#### Assistance system function

To find out in details about all the functions and settings of the assistance system, consult the use and maintenance manual provided by MANDELLI S.r.l.



### 3.5.5 Malfunction code

The bicycle management components are continuously and automatically controlled. When an error is detected, the corresponding error code appears in the central area of the display, as shown in the image below.

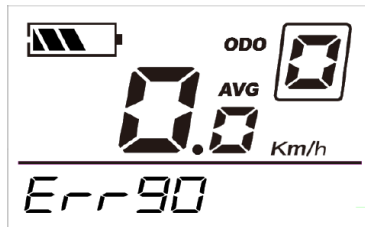


Figure 8 – Malfunction code

Have your bicycle checked and repaired when an error code appears on the display.

Otherwise, you will not be able to ride the bicycle normally. Always contact an authorized dealer.

Error code	Definition
90	Zero torque error. Torque sensor problem cause the engine to stop. Do not pedal backwards, turn the bicycle off and on. If the problem is still present, contact assistance service who will check/replace the torque sensor or engine control unit.
11	Torque out of range. Torque sensor problem causing engine to stop. Turn the bicycle off and on. If the problem is still present, contact the assistance service who will check/replace the torque sensor or the engine control unit.



Error code	Definition
92	Torque sensor failure. Switch to cadence mode. Contact the assistance service who will check/replace the torque sensor or the engine control unit.
13	Transmission sensor error. Problem, only shown, of the transmission sensor. Contact assistance service who will check/replace the transmission sensor.
15	Speed sensor error. Problem, only shown, of the speed sensor. Adjust the position of the speed sensor and of the magnet. If the problem is still present, contact assistance service who will carry out the adjustment and check/replace the speed sensor.
18	Cadence error. Cadence sensor problem causing engine to stop. Contact the assistance service which will check/replace the cadence sensor.
20	Electronic board high temperature warning. Engine high temperature problem causing reduced engine power. Reduce the level of assistance. If the problem is still present, contact the assistance service which will check/replace the engine control unit.
A1	Electronic board high temperature error. Engine overheating problem causing engine to stop. Turn off the system and wait for it to cool down. If the problem is still present, contact the assistance service which will check/replace the engine control unit.



Error code	Definition
22	Electronic board temperature sensor fault. Temperature sensor failure causing reduction in engine power. Contact the assistance service that will check/replace the engine control unit.
25	Engine high temperature warning. Engine high temperature problem causing reduced engine power. Reduce the level of assistance. If the problem is still present, contact the assistance service who will check/replace the engine control unit.
A6	Engine high temperature error. Engine overheating problem causing engine to stop. Turn off the system and wait for it to cool down. If the problem is still present, contact assistance service who will check/replace the engine control unit.
A7	Engine internal flash error. Problem with the internal engine control unit causing the engine to stop. Turn off the system and start it again. If the problem is still present, contact assistance service who will reprogram the engine parameters with the dedicated tool and will check/replace the engine control unit.



Error code	Definition
80	Loss of engine communication. Loss of communication between the engine and the display causing the engine to stop. Turn off the system and start it again. If the problem is still present, contact the assistance service who will check the connection between the display and the motor and check/replace the display and control unit of the engine.
32	Loss of LORA system communication. Communication loss problem with the LORA system. Turn off the system and start it again. If the problem is still present, contact the assistance service who will check the connection between the LORA system and the engine and will check/replace the LORA system and the engine control unit.
01	CRC system communication error. Communication loss problem with the CRC system. Turn off the system and start it again. If the problem is still present, contact the assistance service who will check/replace the display and the unit engine control unit.
40	Engine error EST. Engine problem causing it to stop. Turn off the system and start it again. If the problem is still present, contact the assistance support who will check/replace the engine control unit.



Error code	Definition
41	Motor overcurrent peak. Overcurrent motor problem causing it to stop. Turn off the system and start it again. If the problem is still present, contact the assistance support who will check/replace the motor control unit.
C2	Motor phase loss. Motor phase loss problem causing it to stop. Turn off the system and start it again. If the problem is still present, contact the assistance service who will check/replace the engine control unit.
43	DC motor overcurrent. Overcurrent motor problem causing it to stop. Turn off the system and start it again. If the problem is still present, contact the assistance service who will check/replace the engine control unit.
D0	Battery overvoltage. Battery overvoltage problem causing the engine to stop. Turn off the system and start it again. If the problem is still present, contact the assistance service who will be able to update the bicycle information, check/replace the display, the engine control unit or the battery.
51	Low battery voltage. Low battery voltage problem causing the engine to stop. Turn off the system and start it again. If the problem is still present, contact the assistance service who will be able to update the bicycle information, check/replace the display, the engine control unit or the battery.



Codice errore	Definizione
52	Battery overcurrent. Battery overcurrent problem causing engine to stop. Turn off the system and start it again. If the problem is still present, contact the assistance service who will check/replace the motor control unit.
E0	Battery version error. Battery problem causing engine to stop. Turn off the system and start it again. If the problem is still present, contact the assistance service who can update the bicycle information, check/replace the display, the motor control unit or the battery.
E5	Display version error. Display problem causing engine to stop. Turn off the system and start it again. If the problem is still present, contact the assistance service who can update the bicycle information, check/replace the display or the motor control unit.

### **3.6 Assistance activation**

The assistance system is controlled via the controller with display, installed on the handlebar, near the left grip. In particular, the assistance is activated or deactivated using the ON/OFF button (Ref. B in Figure 6). Once the system is activated, the management display lights up, through which it is possible to see the activity status of the vehicle.

The engine power depends on the force exerted on the pedals, according to a multiplication factor based on the selected assistance level.





The assistance decreases linearly until reaching 25 km/h. Once this speed is exceeded, the assistance is automatically deactivated.

	<b>CAUTION</b>	<b>Assistance activation</b>
<b>Before turning on the assistance it is necessary to correctly insert the battery at the top of the oblique frame post.</b>		

### *3.7 Assistance at starting / walking*

The pedal-assisted bicycle model **City urban with central motor** is equipped with the starting and/or walking assistance function.

The use of the start/walk assist function is indicated by the display, as shown below.



**Figure 9 – Indication of activation of assistance at starting / walking.**

To activate it proceed as follows:

- 1- Stand firmly on the bicycle or get off it and hold the handlebars firmly to prevent the bicycle from slipping;
- 2- Turn on the assistance system;
- 3- Hold the “ – ” button (ref. C in figure 6);
- 4- The function is activated after 1 sec.



The start/walk assist function is activated maintaining the button pushed and the bicycle travels at a speed of approximately 6 km/h as long as the “-” button is pressed. The bicycle then returns to the previously selected pedalling assistance level.

	<b>CAUTION</b>	<b>Assistance at starting / walking</b>
<p><b>The starting/walking assistance must only be used when walking while pushing the bicycle. Do not use while remaining on the seat.</b></p>		

### **3.8 General regulations**

The buttons on the display allow adjustments of the parameters for the operation of the bicycle.

All parameters are adjustable only when the bicycle is parked and stopped.

Press the ON/OFF button to turn on the display.

To access the adjustment screens described below, press and hold the ON/OFF and – buttons together for 1 s.

	<b>CAUTION</b>	<b>Parameter setting</b>
<p><b>The incorrect setting of the parameters could lead to dangers when using the bicycle, illegal behavior of the vehicle or incorrect indications. Carry out the parameter settings only if you are aware of the changes made.</b></p>		



### 3.8.1 Display set up

#### WHEEL SIZE SETTING

The wheel size represents the diameter of the wheel. The wheel size is indicated with d1a; the selectable values are 12, 14, 16, 18, 20, 22, 24, 26, 700C, 28, 29.

Press the + or – button to choose the correct wheel diameter value, to have the right indication of speed and distance. The correct value should be 700C but the default value is 20. Press the ON/OFF button to confirm your choice.

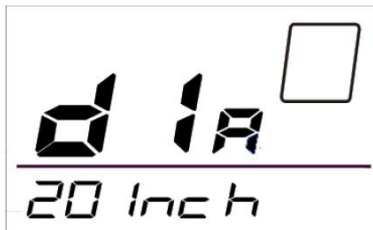


Figure 10 – Wheel size interface.

#### SOFTWARE VERSION OF THE CONTROLLER

The controller Software Version represents the version number of your bike's controller software. The version is indicated with CLS; the version is indicated but cannot be changed via the display.



Figure 11 – Software version controller interface.



## SOFTWARE VERSION OF THE DISPLAY

The display software version represents the version number of the display software. The version is indicated with DPS; the version is indicated but cannot be changed via the display.



Figure 12 – Interface of the display software version.

## UNIT OF MEASURE SETTING

You can change the unit of measurement setting between metric and imperial. U-0 means metric units, U-1 means imperial units; the default unit is metric. To change the settings, press the + or – button to choose the desired unit of measurement, then press the ON/OFF button to confirm and record the chosen value.

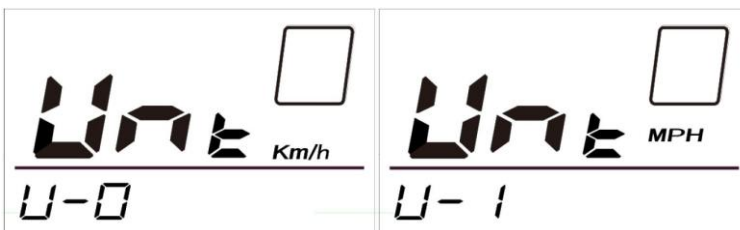


Figure 13 – Interface of the unit of measure.



## SCREEN BRIGHTNESS SETTING

You can change the brightness of the screen. Brightness is indicated with BLG. You can choose between five brightness levels from 1 to 5: 1 is the darkest, 5 is the lightest. The brightness is preset at the factory to a value of 3.

To change the settings, press the + or – button to choose the desired unit of measurement, then press the ON/OFF button to confirm and record the chosen value.



Figure 14 – Interface of the screen brightness.

## PEDAL ASSIST SPEED SETTING

You can change the pedalling assistance speed. The pedalling assistance speed is indicated with SPD. You can choose between 5 and 46 km/h. The pedal assistance speed is preset at the factory to 25 km/h. To change the settings, press the + or – button to choose the desired unit of measurement, then press the ON/OFF button to confirm and record the chosen value.



### CAUTION

### Setting the pedalling assistance speed

**Increase the pedal assistance speed to a value greater than 25 km/h is illegal for circulation on roads open to the public and can be dangerous for circulation on private roads.**



Figure 15 – Pedal assistance speed interface.

### IMPOSTAZIONE SETTING STRAT / WALKING ASSIST SPEED

You can change the starting/walking assistance speed. The starting/walking assistance speed is indicated with PSH. You can choose between 3 and 6 km/h.

To change the settings, press the + or – button to choose the desired unit of measurement, then press the ON/OFF button to confirm and record the chosen value.

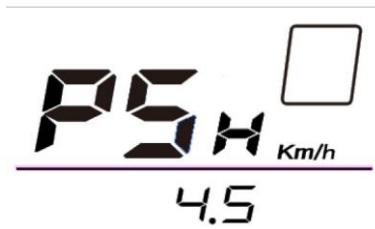


Figure 16 – Start / walk speed assistance interface.

### EXIT FROM SETTING

When you finish the desired settings, short press the ON/OFF button to confirm the setting, then hold it pressed to save the settings made and exit the current setting interface.



### 3.9 Battery

The assistance system of the pedal-assisted bicycle requires the presence of a battery. Specifically, the battery is removable, so it is possible to remove it during the maintenance or when you want to store the vehicle.

#### 3.9.1 Battery installation / removal

To insert the battery, proceed as follows:

1. Insert the battery release key into the lock on the front left part of the frame and turn it to the lock open position.
2. Insert the battery, taking care to match the lower part of the battery with the housing in the upper part of the frame. Press the battery in the upper part until you hear the correct insertion click.
3. Rotate the key to lock the battery and remove it.



Figure 17 – Battery position.



To remove the battery, proceed as follows:

1. Insert the battery release key into the lock on the front left part of the frame and turn it to the lock open position.
2. Remove the battery by pressing the top of the battery.
3. Remove the key.

### 3.9.2 Battery charge status

By turning on the display on the handlebar you can view the battery charge status on the display on the upper left side.

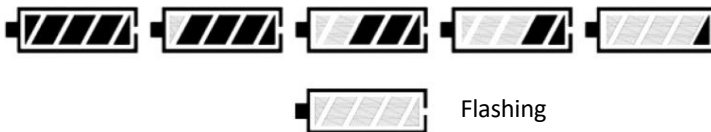


Figure 18 – Battery charge status.

If all five bars are lit it means the battery is fully charged. As the battery discharges, the bars will turn off and, when there are no illuminated bars and the outside shape of the bars flashes, it is necessary to recharge the battery.

### 3.9.3 Battery charge

Recharging the pedal-assisted bicycle battery can be done with the battery assembled on the vehicle or removed from it. Proceed as follows:

- 1- Turn off the assistance system of the pedal-assisted bicycle using the appropriate ON/OFF button (Ref. B in Figure 6).
- 2- Remove the battery in case you want to charge the battery separately.
- 3- Connect the supplied battery charger to the socket on the bicycle frame or on the battery (if removed) with the appropriate plug.





- 4- Connect the battery charger to a power socket (230 V / 50 Hz) and charge the battery for the time needed.



Figure 19 – Battery socket on the bike.

	<b>CAUTION</b>	<b>Battery charge</b>
<b>ALWAYS CONNECT THE PLUG TO THE BATTERY FIRST AND THEN THE CHARGE BATTERIES AT THE POWER SOCKET</b>		

### ***3.10 Head light and rear light***

To ensure visibility both during the day and at night, two lights are installed, one front and one rear. These devices are activated by the control device of the assistance system during the use of the pedal-assisted bicycle (Ref. A in Figure 6).

### ***3.11 Suspensions***

The pedal-assisted bicycle is equipped with a front suspension system that allows the user to dampen the stresses caused by the roughness of the route.

The suspension model is adjustable based on the characteristics of the user and the terrain.



To adjust the hardness of the suspension, act on the ring nuts at the top of the fork.



Figure 20 – Front fork regulation.



**CAUTION**

**Suspensions**

**Adjust the suspension hardness only if you have knowledge of the possible consequences in case of incorrect adjustment.**

### ***3.12 Troubleshooting***

<b>PROBLEM</b>	<b>SOLUTION</b>
<b>The system does not activate</b>	Check that the battery is charged
<b>The assistance is not working</b>	Check that the battery has enough charge.

For other problems indicated by the display, read the chapter on fault codes.



### CAUTION

### Troubleshooting

**In case the assistance system does not activate even if the battery appears to be charged, contact the assistance service provided by MANDELLI S.r.l. or by an authorized service center.**



## 4 Terms of use and environment

### 4.1 Terms of use

The pedal-assisted bicycle is designed and built to be used outdoors, on roads and in private or public environments.

In particular, the components and the type of pedal-assisted bicycle allow you to tackle routes with asphalted surfaces or with similar characteristics without roughness.

Any modification of the state of construction can compromise the behaviour, safety and stability of the pedal-assisted bicycle and can lead to an accident.

Any other use, or the extension of the use beyond the intended one, do not correspond to the intended use attributed by the manufacturer, and therefore the manufacturer cannot assume any responsibility for any resulting damage.

### 4.2 Environment

The pedal-assisted bicycle can be used outdoors, in the absence of adverse weather conditions (heavy rain, hail, snow, strong wind, etc.):

- Maximum temperature allowed: +40 °C
- Minimum temperature allowed: 0 °C
- Maximum humidity allowed: 70%
- Charging temperature 0 - 40 °C

The environment of use may have an asphalt surface or one with not excessively high roughness (gravel road), compatible with the tread of the tires fitted.

Furthermore, the place of use must be illuminated, by the sun or artificial lights, to guarantee the correct vision of the route and the controls of the pedal-assisted bicycle (recommended from 300 to 500 lux).



The pedal-assisted bicycle is equipped with a white light at the front and a red light at the rear.

	<b>CAUTION</b>	<b>Prohibited environment</b>
<p>The pedal-assisted bicycle must not be used:</p> <ul style="list-style-type: none"><li>• in areas subject to fire or explosion risk;</li><li>• in environments with a corrosive and/or chemically active atmosphere;</li><li>• in poorly lit environments;</li><li>• on excessively rough terrain, given the bike characteristics (frame, wheels, etc.);</li><li>• In closed spaces, if they do not allow a safe use;</li><li>• In extremely dark environments.</li></ul>		

### *4.3 Incorrect use and warnings*

The actions described below, which obviously cannot cover the entire range of potential possibilities of "misuse" of the pedal-assisted bicycle, must be considered **absolutely prohibited**.

	<b>CAUTION</b>	<b>Prohibited use</b>
<ul style="list-style-type: none"><li>• <b>Performing prohibited operations will void the warranty.</b></li><li>• <b>The manufacturer declines all responsibility for any damage to things or people resulting from the execution of prohibited operations.</b></li></ul>		



**DANGER**

**IT IS STRICTLY FOBIDDEN**

- Riding the pedal-assisted bicycle for uses other than those for which it was built; no passenger allowed.
- Ride the pedal-assisted bicycle in areas where there is a significant risk of explosion or fire.
- Ride the pedal-assisted bicycle in adverse weather conditions (heavy rain, hail, snow, strong wind, etc.).
- Carrying a passenger in addition to the driver.
- Riding the pedal-assisted bicycle under the influence of alcohol or drugs.
- Ride the pedal-assisted bicycle if your weight is higher than the permitted one.
- Charge the battery in an environment that is too hot or insufficiently ventilated.
- Cover the battery while charging.
- Smoking or using open flames near the charging area.
- Transit or stop on sloping surfaces (greater than 10%) or excessively bumpy surfaces (with potholes, depressions, obstacles, etc.).
- Carry out any maintenance with the battery connected.
- Use non-original spare parts.
- Insert your limbs or fingers between the moving parts of the bicycle.
- Use the pedal-assisted bicycle on unpaved terrain or with similar characteristics.




## 5 UPLIFTING AND TRANSPORTATION

### 5.1 Uplifting

The weight of the pedal-assisted bicycle model **City urban with Central motor** is such that it can be lifted and transported by one or two people, also due to its overall dimensions.

The optimal solution for carrying out the uplifting is to grasp the handlebar knob and the rear part of the saddle.


	<b>DANGER</b>	<b>Crushing and impact</b>
<ul style="list-style-type: none"><li>• <b>During the uplifting you must operate with extreme caution to avoid damage to people and things.</b></li><li>• <b>This operation must be performed by robust people.</b></li></ul>		

*The manufacturer is not responsible for breakages due to lifting and/or transporting the pedal-assisted bicycle after delivery.*

### 5.2 Transportation

To guarantee the safety of the transport in a van, it is necessary to prevent the movement of the pedal-assisted bicycle. This is achieved by binding it with anchoring bands or cables in good conditions.

The attachment devices must be installed so as not to damage the frame and other parts of the bicycle.

	<b>DANGER</b>	<b>Risk of injury</b>
<b>ALWAYS make sure that the frame and handlebar adjustment screws are well tightened before each use of the bicycle. Otherwise injuries, even serious ones, can happen!</b>		



## 6 FIRST RIDE

### 6.1 Battery charging

Before using the bicycle for the first time, the battery must be charged for at least 24 hours, using the appropriate supplied battery charger.

The pedal-assisted bicycle, **City urban with central engine** model, is equipped with an electric motor powered by a 36 V lithium-ion battery. The battery is housed in the central part of the bicycle, under the inclined frame.

The average charging time varies from 4 to 8 hours, depending on the percentage of battery discharge.

The charging operation can be carried out in a well-ventilated garage with the battery installed on the bicycle.

To charge the battery proceed as in paragraph 3.9.3.



**CAUTION**

#### Battery charge

**The battery must not be completely discharged to preserve its life and to avoid the risk of damage. In any case, it must be recharged at least every 3 months even if it is not used.**





## **DANGER**

### **Precautions when charging**

- **Always connect the plug to the battery and then the power plug to the mains.**
- **When the charging is completed, always first remove the plug from the mains and then the plug from the battery.**
- **Always recharge the battery completely.**
- **Always use the original supplied power supply.**
- **Do not leave the battery charging longer than necessary.**
- **Always recharge in a ventilated environment.**
- **Do not recharge the battery in too hot environments.**
- **Do not recharge the battery near flammable liquids.**
- **Do not cover the battery while charging.**
- **If the battery smells badly while charging, immediately unplug it from the power supply and ventilate the room, do not touch the battery.**

## **6.2 Preliminary check**

Before each use, the driver must ensure the safety status of the pedal-assisted bicycle. Therefore, perform the following inspections before riding the electric bicycle.

### **6.2.1 Control device**

Check the efficiency and state of charge of the battery. The use in very cold environments quickly degrades the battery's efficiency. Check the chain tension and lubrication.


### **6.2.2 Wheels**

Check the tire inflation pressure. Check the state of wear of the tread: there must not be cuts, cracks, foreign bodies, anomalous swellings, visible plies or any other damage.




### 6.2.3 Brake system

Check the brakes with a low-speed braking test in an obstacle-free area, first with the rear brake and then with the front one.

 <b>CAUTION</b>	<b>Negative check</b>
<ul style="list-style-type: none"><li>• If, during the preliminary checks, any kind of defects are found and even a single check is negative, <b>DO NOT RIDE THE PEDAL-ASSISTED BICYCLE.</b></li><li>• Immediately take all the measures to carry out an appropriate repair and, if necessary, contact the Assistance Service or an authorized workshop.</li></ul>	

### 6.2.4 Handlebar and saddle position

Check that the frame, the seat and the handlebar are properly secured and positioned in the most comfortable configuration for the rider to have the complete control of the bicycle. Otherwise, before setting off, adjust the position and the seat, the handlebar and the brake systems.

 <b>DANGER</b>	<b>Frame position</b>
<p><b>It is strictly forbidden to use the bicycle without having correctly fixed all the parts of the bicycle and without assuming a comfortable and safe driving position.</b></p>	


To adjust the seat position, unlock the seat hook, then raise or lower the seat and close the hook again.

### 6.2.5 Brake and suspension setting



Before using the pedal-assisted bicycle, adjust the position of the brake levers on the handlebars, to make their use easier.

At this point adjust the suspensions to make the use of the pedal-assisted bicycle more comfortable.

 <b>DANGER</b>	<b>Regulation</b>
<p><b>It is strictly forbidden to adjust the bicycle devices if you are not an expert and trained person. Incorrect adjustment can cause serious injuries.</b></p> <p><b>Therefore, if you are not able to adjust these functions, please contact specialised personnel.</b></p>	

*The manufacturer is not responsible for injuries resulting from an incorrect adjustment of the pedal-assisted bicycle devices.*

### 6.2.6 Lighting

Check the front and rear light.




## 7 BIKE USAGE

The pedal-assisted bicycle was designed and built for an amateur use in open places, with asphalt or light dirt surfaces.

- It is forbidden to carry a passenger in addition to the driver.
- It can be used only by experienced adults and children.
- The use of a pedal-assisted bicycle is not recommended for pregnant women.
- Do not take alcohol or drugs before riding the pedal-assisted bicycle.
- Do not ask your pedal-assisted bicycle to perform in excess of that for which it was designed. Use the bicycle only as described in this manual.
- Never ride the pedal-assisted bicycle with removed parts.
- The pedal-assisted bicycle cannot be used on very wet, icy or slippery surfaces.
- Avoid very irregular surfaces and obstacles.
- Ride with both hands on the handlebars.
- Replace worn and/or damaged parts. If necessary, have it checked by authorized personnel.

Before leaving, carry out all the checks reported in the previous chapter and always stay concentrated while driving, not only for your own safety.

	<b>DANGER</b>	<b>Risk of injury</b>
<ul style="list-style-type: none"><li>• <b>Check that all controls are perfectly working.</b></li><li>• <b>Always respect the highway code.</b></li><li>• <b>Use appropriate protective equipment (helmet, etc.)</b></li></ul>		

### 7.1 *Riding your bike*



Before using the pedal-assisted bicycle in the traffic, it is advisable to familiarize with the bike.

The first uses must be made in private environments away from traffic, other cyclists, or any kind of obstacles.

The driver must adapt the travel speed of the pedal-assisted bicycle to the conditions of the route and the presence of other vehicles or pedestrians. Above all, when approaching a curve, you must maintain a moderate speed (the smaller the curve radius, the lower the speed). When the driver stops pedalling or the speed reaches 25 km/h, the electric motor does not provide assistance and the bicycle will be completely managed by muscle pedalling.

It is essential to gain experience in riding a pedal-assisted bicycle before proceeding at high speed.

If you do not want to use the engine, simply remove the battery, or set the minimum assistance level.

## 7.2 *Braking system*

Before braking, stop pedalling and then pull the two brake levers, first the rear, then the front one.



**CAUTION**

**Driving conduct**

**Be careful not to block the wheels when braking: you could lose control of the bicycle.**

**It is very dangerous to brake when cornering: you could lose control of the bicycle.**



### ***7.3 Parking***


The bicycle is equipped with a stand for lateral support. Before leaving the bicycle, check that the pedal-assisted bicycle is placed on solid ground and that remains in a stable position.

The bicycle must be parked in the designated parking areas and, in any case, without obstructing the passageways, emergency exits, electric panels and fire stations.




## 8 MAINTENANCE

### 8.1 General RULES

	<b>DANGER</b>	<b>Risk of injury</b>
<p>During all maintenance works, follow appropriate safety measures. Consult the instructions on page. 13.</p> <p>All maintenance operations must be carried out with the battery disconnected from the pedal-assisted bicycle and from the battery charger and the bicycle must be supported in a stable manner, using the specific support elements.</p>		

To maintain the full functionality of your pedal-assisted bicycle for a long period of time, it is necessary to carry out maintenance as prescribed, with correctness and professional skills.

After every ordinary maintenance intervention, a check on the perfect functioning of all the controls is mandatory.

	<b>CAUTION</b>	<b>Negative check</b>
<ul style="list-style-type: none"><li>• In case one test is negative, <b>DO NOT RIDE</b> the pedal-assisted bicycle.</li><li>• Immediately activate one adequate repair, and if necessary, contact the Assistance Service.</li></ul>		

This manual does not provide detailed information regarding disassembly and extraordinary maintenance, as these operations must always and exclusively be carried out by MANDELLI S.r.l. Assistance Service personnel or by authorized technicians.



The Assistance Service can provide all the information and respond to all requests to take care of and maintain your pedal-assisted bicycle in perfect working order.

If non-original parts are fitted, the warranty becomes invalid!

## **8.2 Maintenance and daily inspection**

### **8.2.1 Ce frame and pictogram inspection**

Check the legibility and presence of the CE plate, the chassis number stamped directly on it and the warning stickers applied to the frame of the bicycle.

### **8.2.2 Wheels inspection**

Using the appropriate inflation valve on the rims, check the inflation pressure of the tires using a compressor and a gun with pressure gauge, or a pump.

Check the condition of the tread, of the rim and the fixing of the rims to the hubs. If you need to replace the tyres, contact the Assistance Service or a qualified tire dealer.

### **8.2.3 Brake cables inspection**

The brakes must be adjusted to ensure effective braking and at the same time the control levers must have an adequate travel to be able to modulate the braking: in other words, the brakes must be neither too slow nor too tight.

### **Brake precision adjustment**

Brakes adjustment must only be carried out by authorized personnel.





## 8.3 Maintenance and weekly inspection

### 8.3.1 Cleaning

Cleaning the pedal-assisted bicycle is not only a matter of decorum, but also allows you to immediately detect any defects in it.


To avoid damaging or compromising the functioning of the various components, especially the electrical parts, cleaning must be carried out taking certain precautions. It is absolutely forbidden to direct pressurized water towards the electrical parts, the engine and the battery, for which a sponge washing is recommended.

Before starting the pedal-assisted bicycle, dry it completely with low-pressure compressed air and check that there is no residual moisture left on the electrical components.

### 8.3.2 Lubrication and chain tension inspection

It is important to lubricate the chain regularly, to avoid excessive worn and to extend its life.

1. Clean the entire length of the links with a rag.
2. Spray all links with special grease spray for drive chains.

	<b>DANGER</b>	<b>Correct chain lubrication</b>
<b>Be extremely careful not to get lubricant on the brakes or on the tires of your bicycle. This can lead to serious injuries!!</b>		



### **8.3.3 Frame and bolts inspection**

The supporting frame of the pedal-assisted bicycle and the welds must be free of visible defects such as: cracks, deformations, incisions, corrosion, etc.

Make sure that all bolts on the pedal-assist bicycle are well tightened.

## ***8.4 Monthly maintenance and inspection***

### **8.4.1 Controllo dei circuiti e dei componenti elettrici**

Check the condition and the fastening of the battery cables: the sheaths of the electrical cables must be in good condition and the terminals must be well tightened, not corroded and covered with insulating grease.

Check that all light bulbs and display lights come on correctly.



## 9 TECHNICAL ASSISTANCE AND SPARE PARTS

In case of need for technical assistance or for a prompt delivery of spare parts, it is recommended to provide the following data:

- Type of pedal-assisted bicycle.
- Serial number
- Construction year
- Quantity needed



**CAUTION**

**Original spare parts**

**The manufacturer exempts itself from any liability for any kind of damage, generated by the use of non-original spare parts.**



## 10 WHAREHOUSE STORAGE

If the pedal-assisted bicycle has to be stored for a long period of inactivity, the following operations must be carried out:

- Store it in a dry and ventilated place.
- Carry out a general cleaning of the pedal-assisted bicycle.
- Remove the battery from its location and place it in a specific storage site (fully charged) and recharge it regularly.
- Leave the bicycle on a special support.
- Protect the external electrical contacts with antioxidant products.
- Grease all the surfaces not protected by paint or anti-corrosion treatments.



## 11 COMPONENTS AND MATERIALS DISPOSAL



### CAUTION

### Material disposal

The disposal of packaging, waste and aspirated dust, replaced parts, and of the pedal-assisted bicycle at the end of its life, must be carried out in an environmentally friendly manner; avoiding the polluting of soil, water and air and respecting, in any case, the national and local legislation in force on this matter.

### Indication for the waste treatment:

- Ferrous materials, aluminium, copper: these are recyclable materials to be given to a specific authorized collection centre.
- Plastic materials, fibreglass, gaskets, tyres: these are materials to be sent to landfill or to a specific recycling centre.
- Batteries must be taken to an authorized disposal centre.

Divide the materials according to their nature, appointing specialized and authorized disposal companies, in compliance with the laws' provisions.





## 12 WARRANTY

The pedal-assisted bicycle is guaranteed for 24 months for the entire bicycle, except for the battery, whose guarantee is 12 months and is limited to correct use of the same. If the battery has been allowed to discharge below the permitted level, the manufacturer is not liable for any damage.

The warranty provides for the free replacement of any defective or prematurely worn part as long as all the requirements have been respected and there is no evidence of improper use of the bicycle. The manufacturer's obligations are limited to the replacement of defective parts. The following are not covered by the warranty except for obvious initial defects:

- tires following accidental punctures or breakages;
- braking pads, subject to wear;
- general wear material.

**MANDELLI S.r.l.** does not assume responsibility for damage to things or people due to improper use of the vehicle.