

1.1 SAFETY INFORMATION

Precautions and general warnings

-  The clothing of the operator performing the repair operations must be adequate to avoid the risk of injury when working on moving parts (for example, too wide clothes that can get caught).
-  Do not wear personal items (e.g. rings, wristwatches, etc.) while performing repairs on the vehicle, and in particular on the electrical system.
-  Keep the work area tidy, to avoid that elements left on the ground interfere with the repair operations.
-  Clean the floors of the working areas from oil, grease or other residual fluids, to avoid slipping.
-  Perform compression or decompression operations on the springs, using only suitable tools to prevent the operations from causing damage to the operator.
-  Avoid inhalation of vapours from cleaning fluids: they can be highly toxic. Make sure the work area is properly ventilated.
-  Use suitable cleaning products for each operation, making sure that they are approved.
-  Wear eye protection when using electrical tools such as drills, grinders or milling machines.

Brakes

-  Brake fluid may damage the vehicle painted, plastic or rubber surfaces. Protect these components with a clean rag when performing certain operations.
-  Always wear protective glasses and in case of accidental contact of the brake fluid with eyes, rinse immediately with plenty of clean, fresh water and consult a doctor immediately. Keep out of the reach of children.
-  Clean the brake pads in a ventilated environment, directing the compressed air jet so as not to inhale the dust produced by the wear of the friction material. Although the latter does not contain asbestos, inhaling dust is however harmful.

Batteries and electrical system

-  Do not disassemble and/or modify batteries and do not use them for purposes other than those for which they were manufactured.
-  If work is to be carried out involving the electrical system, check that the electrical connections, in particular the earth and battery connections, are correctly installed.
-  If the batteries are very hot, disconnect them and wait for them to cool down before proceeding with any work.

Specific safety information

All safety information regarding the use of the electric moped is contained in the user and maintenance booklet and the safety warnings booklet sold with the vehicle.

- This user and maintenance booklet contains all the information you need to familiarise yourself with the electric moped, to know its main components and technology, and to learn all the tips necessary for its correct and absolutely safe use.
- Read the safety warnings booklet carefully: knowledge of and compliance with the warnings prevents the risk of accidents to yourself, other people, animals or property and allows you to use your electric moped in an environmentally friendly manner.
- The documentation (the Use and Maintenance Booklet, the Safety Warnings Booklet, EC Declaration of Conformity, etc.) is an integral part of the moped and must be kept for the entire duration of its use. Check that the owner is always in possession of it.
- In the event of loss or damage of the user and maintenance booklet, inform the owner who may request a new copy from his dealer at any time.

1.2 STANDARDS OF LAW

To use the vehicle it is necessary to meet all the law requirements.

- for the **Issimo City (L1e)** version you must:
 - be at least 14 years old;
 - have **AM** or higher category driving licence;
- for the **Issimo City Pro** and **Issimo City Max (L3e)** versions you must:
 - be at least 16 years old;
 - have **A1** or higher category driving licence;
- insurance;
- government taxes;
- registration;
- movement certificate;
- license plate;
- wear a legally approved helmet.

 **It is strictly forbidden to carry out interventions that alter the operating mode of the vehicle and are punishable by law.**

 **In order for the vehicle to maintain its road use approval, it is necessary to check that all devices prescribed by the Highway Code (headlight and tail light, horns, etc.) are correctly installed and functional.**

1.2.1 Meaning of electric moped (L1e)

The designation of **electric moped** category **L1e**, according to the classification specified in European Regulation **168/2013**, has the following main technical characteristics:

- Electric motor with a maximum continuous rated power not exceeding 4.00kW;
- Maximum speed by vehicle construction of 45 km/h (28 mph) or less.

In some Countries it may be necessary to verify that the vehicle characteristics meet the requirements of specific local regulations.

 **NOTE: This vehicle complies with the Radio Equipment Directive 2014/53/EU.**

 **The vehicle belonging to this category is Fantic Issimo City.**

1.2.2 Meaning of electric motorbike (L3e)

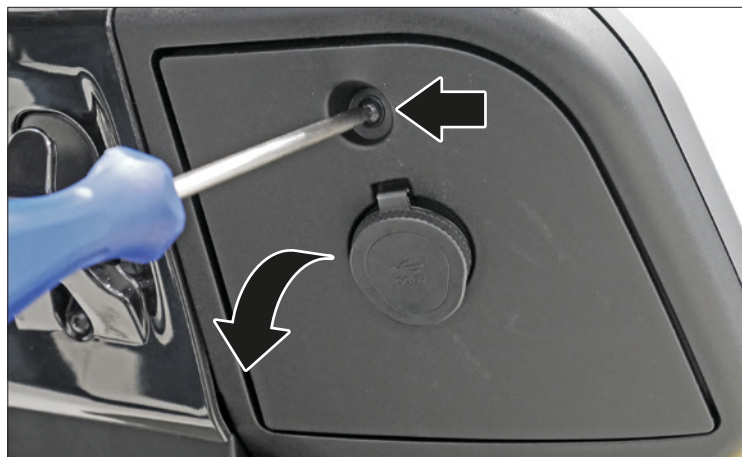
The designation of **electric motorbike** category **L3e**, according to the classification specified in European Regulation **168/2013**, has the following main technical characteristics:

- Electric motor with a maximum continuous rated power not exceeding 11.00kW;

In some Countries it may be necessary to verify that the vehicle characteristics meet the requirements of specific local regulations.

 **NOTE: This vehicle complies with the Radio Equipment Directive 2014/53/EU.**

 **The vehicles belonging to this category are Fantic Issimo City Pro and Fantic Issimo City Max.**

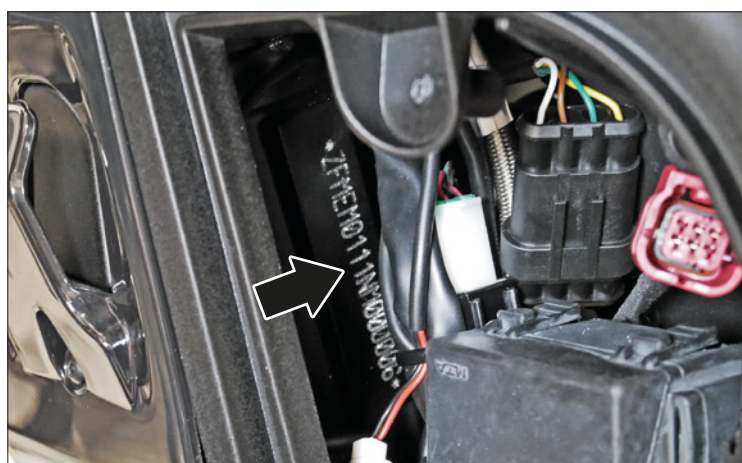


1.3 IDENTIFICATION

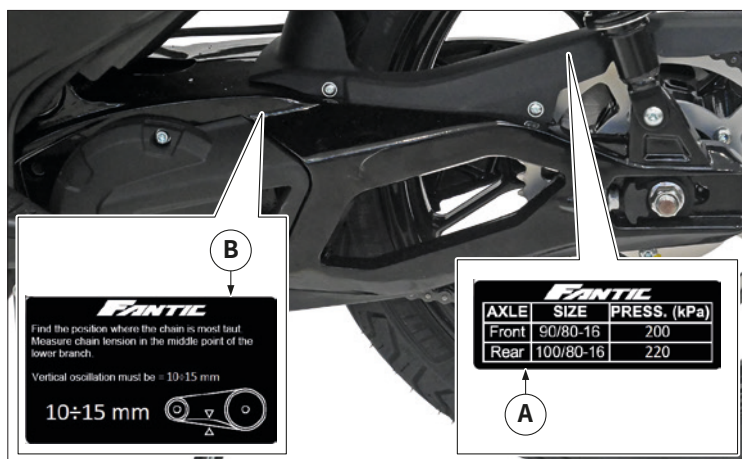
1.3.1 Vehicle Identification Number (V.I.N.)

Fantic Motor vehicles have a vehicle identification number (V.I.N.) visible on the steering head.

To access the steering headstock and the V.I.N. number, it is necessary to remove the USB socket panel located on the right-hand side of the counter shield.



⚠ Do not change the vehicle identification data (V.I.N.) to avoid voiding the warranty and incurring serious criminal and administrative penalties.



1.3.2 Tire and chain specification stickers

On the left rear swingarm of the vehicle, sticker "A" showing the tyre pressures and sticker "B" showing the chain tension are attached.

1.4 SPARE PARTS

We recommend using only original Fantic Motor parts for all the needs. It is recommended to use lubrication products such as greases and oils recommended by Fantic Motor.

Seals, oil seals and o-rings

-  **When performing engine repairs, always use new gaskets, O-rings and oil seals. Also, clean all mating surfaces and edges of sealing rings and O-rings.**
-  **Prior to assembling, lubricate the coupled elements and bearings with the specified oil and apply the prescribed grease to the edges of the sealing rings.**

Washers, plates and split pins

-  **If washers, plates and split pins are disassembled, always use new elements during assembling. The locking tabs must be folded over the tops of the relative nut or bolt after they have been properly tightened.**

Bearings and oil seals

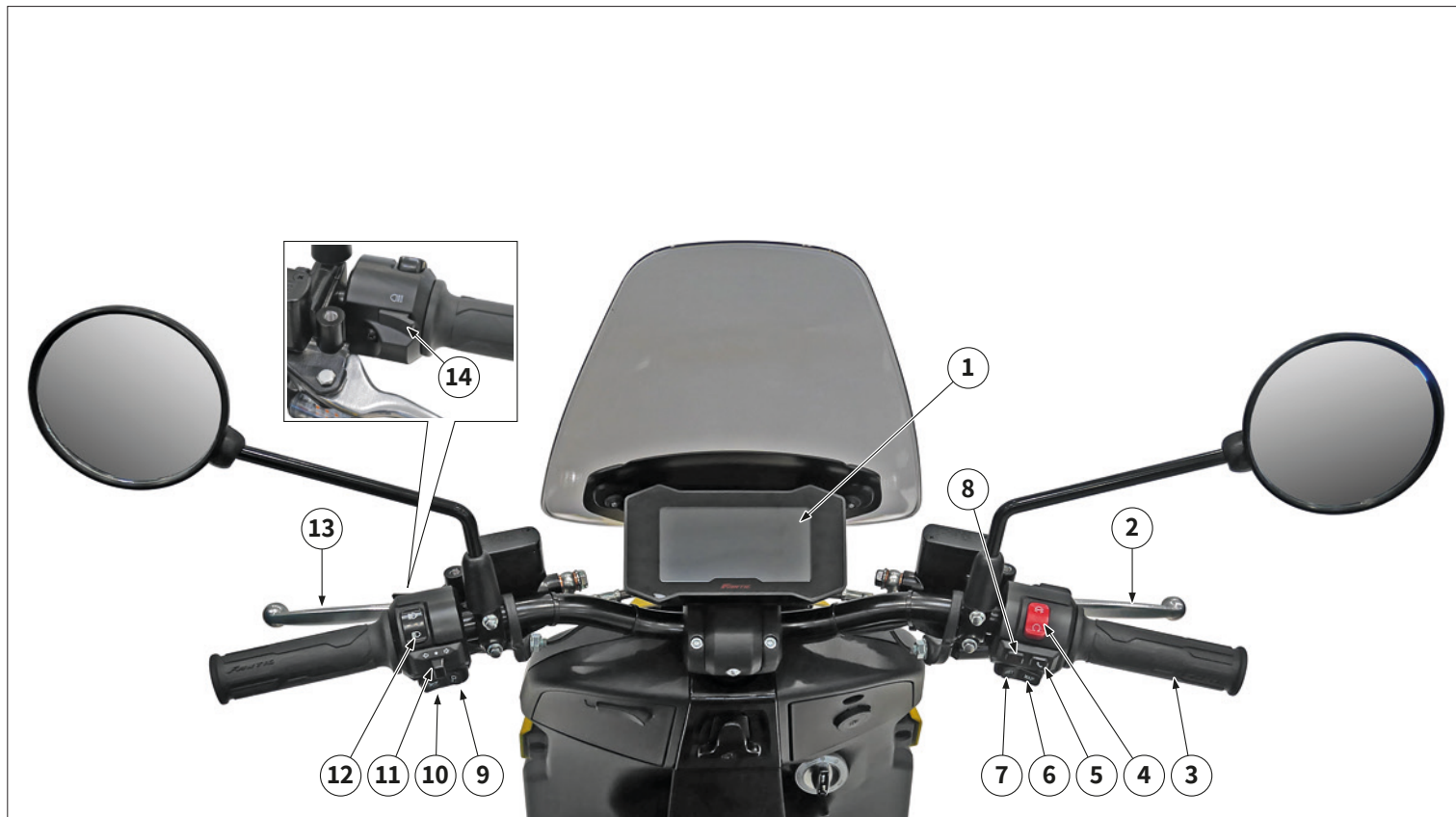
-  **Install bearings and oil seals with the manufacturing identification markings facing outwards, i.e. towards the visible side. When installing the oil seals, apply a thin layer of lithium grease on their edges.**
-  **To avoid damaging the rolling surfaces, do not dry the bearings with compressed air.**

Retaining rings

-  **Check all the retaining rings before installing them. Always replace the retaining rings that have been removed during disassembling. Replace the deformed elastic rings. When mounting a new retaining ring, turn it so that the side with the sharp edge is on the side opposite the point where pressure is applied.**

1.5 CONTROLS AND COMPONENTS

1.5.1 Controls on the handlebar



- | | |
|--|--|
| 1. Digital display | 8. Emergency light button |
| 2. Front brake lever | 9. Vehicle enable button |
| 3. Accelerator | 10. Horn button |
| 4. Motor enabling/disabling | 11. Turn signal button |
| 5. Call answer button (prearrangement) | 12. High beam / low beam selector switch |
| 6. Instrument panel control "MAP" button | 13. Rear brake lever |
| 7. Instrument panel control "SET" button | 14. High beam flasher button |

1.5.2 Vehicle component identification

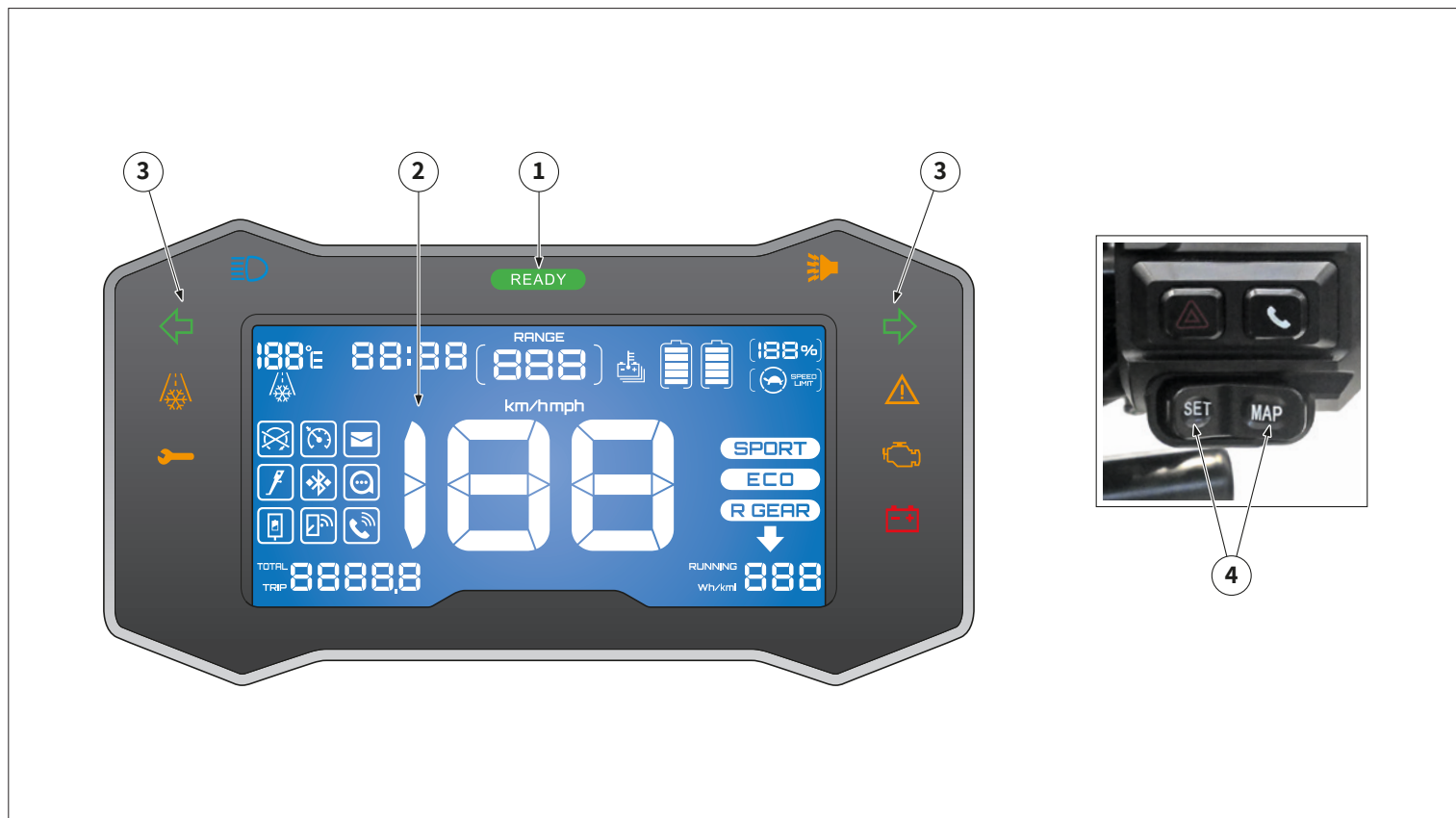


1. Right rear-view mirror
2. Right-hand grip (accelerator)
3. Handlebar
4. Bag hook
5. USB socket
6. Main switch
7. Battery compartment
8. Seat
9. Passenger handle
10. Tail light
11. Rear turn signals
12. License plate holder

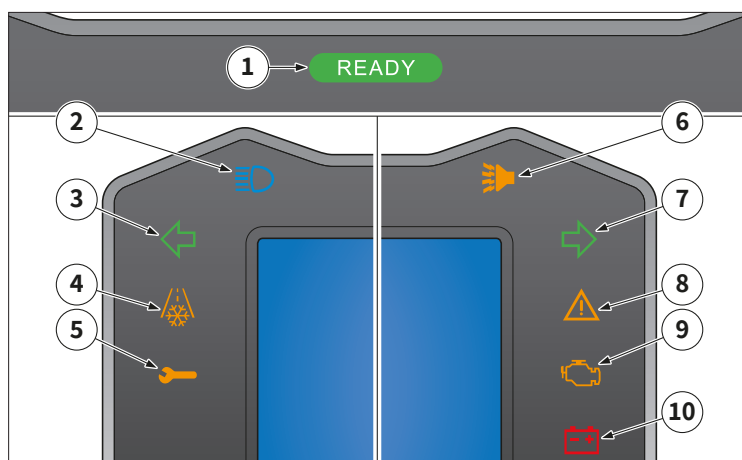
13. Rear shock absorber
14. Rear brake calliper
15. Rear brake disc
16. Rear tyre valve
17. Rear tire
18. Engine
19. Central kickstand
20. Front fork
21. Headlight
22. Fairing
23. Left rear-view mirror
24. Instrument panel

25. Left knob
26. Storage compartment
27. Horn
28. Front mudguard
29. Front tire
30. Front brake disc
31. Front tyre valve
32. Front brake calliper
33. Footrest
34. Drive chain
35. Rear rack
36. Rear fender

1.5.3 Instrumentation



1. Towing indicator enabled
2. Digital display
3. Indicator lights
4. Display controls



READY

1.5.4 Dashboard lights and indicators

1. Towing enable indicator
2. High beam indicator
3. Left-hand flashing indicator
4. Icy road danger indicator
5. Service Indicator
6. Acoustic signal indicator active
7. Right-hand flashing indicator
8. General malfunction indicator
9. Powertrain malfunction indicator
10. Low battery indicator

Towing indicator enabled (READY)

Green indicator light, lights up when the vehicle is enabled via the appropriate command sequence and is ready to drive (see section "OPERATIONS FOR START DRIVING").


Active malfunction indicator

Amber indicator light, lights up when a system malfunction is detected.


Motor malfunction indicator

Amber warning light, lights up when a malfunction is detected in the motor or a component connected to the motor that results in zero or a significant decrease in available torque.


Low battery indicator

Red indicator light, lights up when the battery state of charge reaches about 10%.


Icy road danger indicator

Amber indicator light, lights up when an ambient temperature below about 3 °C (37.4 °F) is detected and indicates the possibility of the presence of ice on the road surface.


Service Indicator

Amber indicator light, lights up to indicate the occurrence of Service checks (100 km before the maintenance mileage is reached).


Flashing indicators in operation

Green lights, lights up when the flashing lights (turn signals) are in use.


High beam indicator

Blue indicator light, lights up when high beam is used.

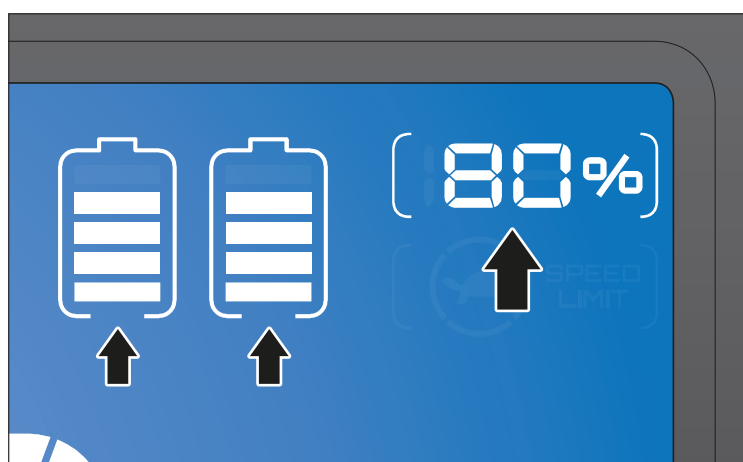

Acoustic signal indicator active

Amber warning light, lights up during activation of the acoustic signal (e.g. when using reverse gear).

1.6 DIGITAL DISPLAY

The digital display allows all vehicle status information to be viewed:

- Speed
- Battery presence and charge
- Mileage travelled, partial (TRIP) or total (TOTAL)
- Distance travelled with remaining battery charge
- Riding mode and average consumption
- Time and outside temperature
- Alarms and functional indications



Battery charge indicators

This part of the display shows the presence and state of charge of the batteries.

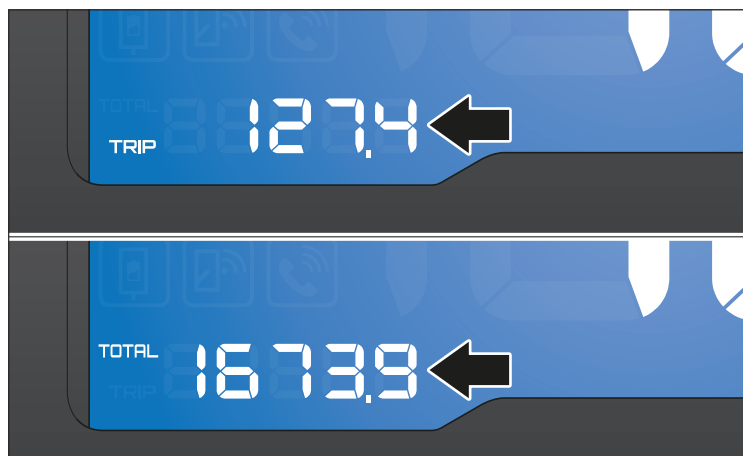
- i** When the vehicle is equipped with two batteries, the percentage charge value remains the same and refers to the total average charge of both batteries.



Speedometer

The speedometer displays the current speed of the vehicle.

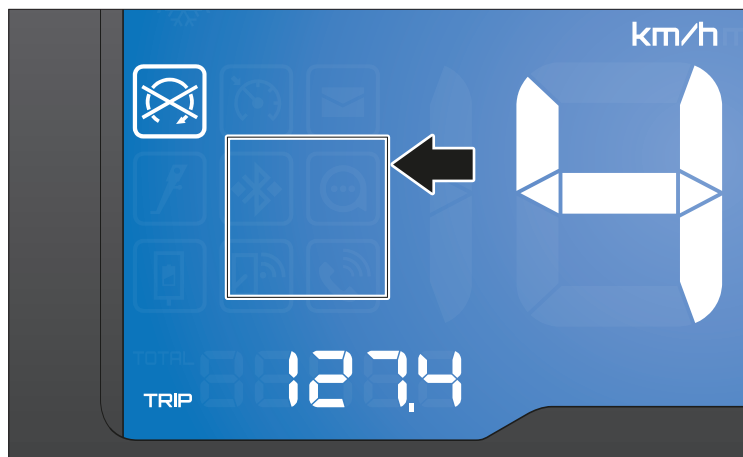
The value can be expressed in **km/h** or **mph**, depending on the selected setting (see section "Display unit of measure selection").



Odometer

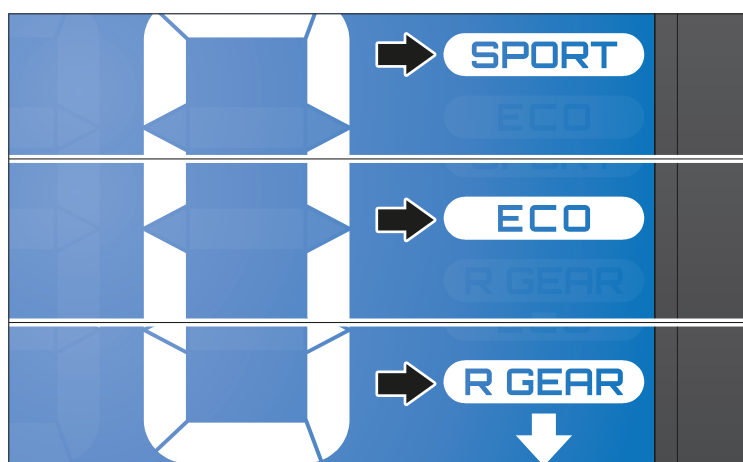
The odometer displays the distance travelled, both partial (**TRIP**) and total (**TOTAL**).

The value can be expressed in **km** or **mi**, depending on the selected setting (see section "Display unit of measure selection").



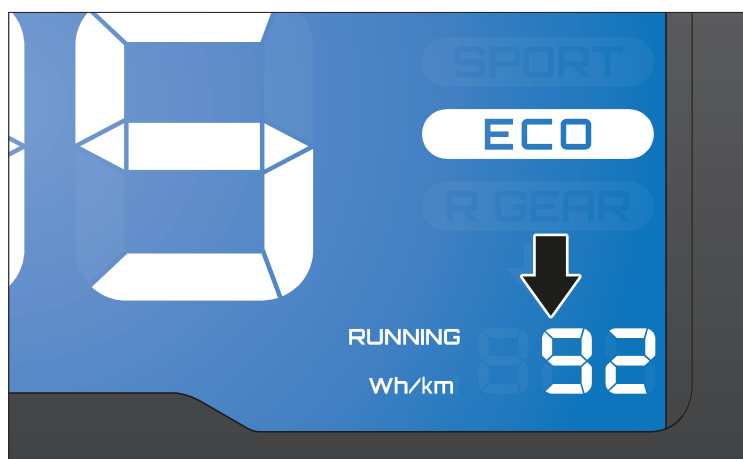
Icons

This part of the display shows alarms or specific functional indications of the vehicle.



Riding mode

This part of the display shows the current riding mode.



Average specific consumption indicator

This part of the display shows the average specific current consumption.

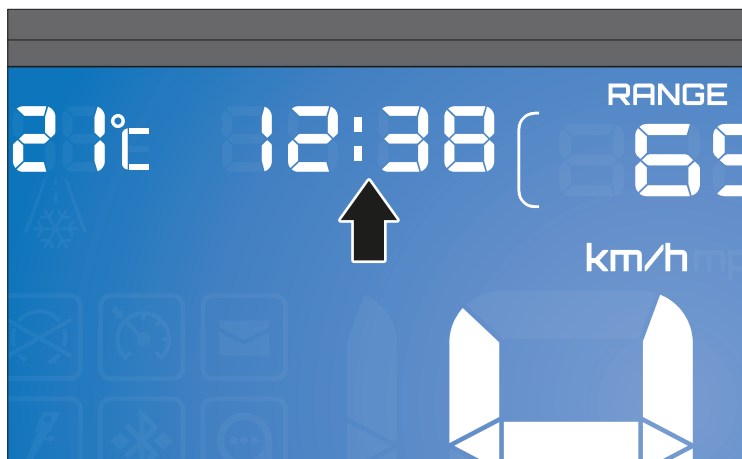
The value can be expressed in **Wh/km** or **Wh/mi**, depending on the selected setting (see section "Display unit of measure selection").



Outside temperature

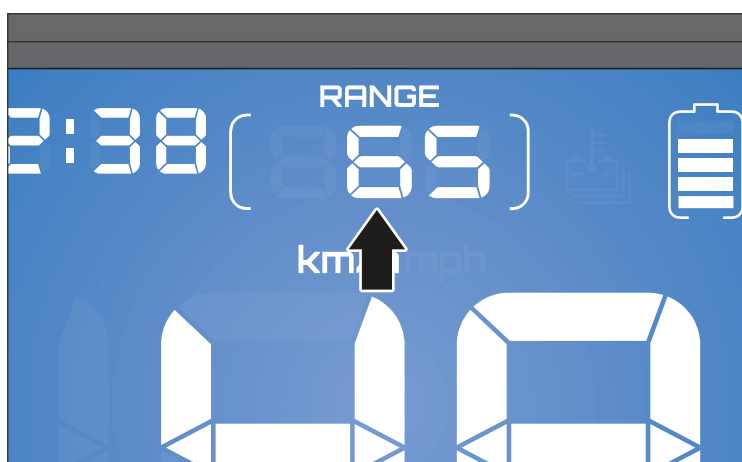
This part of the display shows the outside ambient temperature.

i In outside temperatures below about 3 °C (37.4 °F), a warning symbol may be displayed to indicate the possible presence of ice on the road surface.



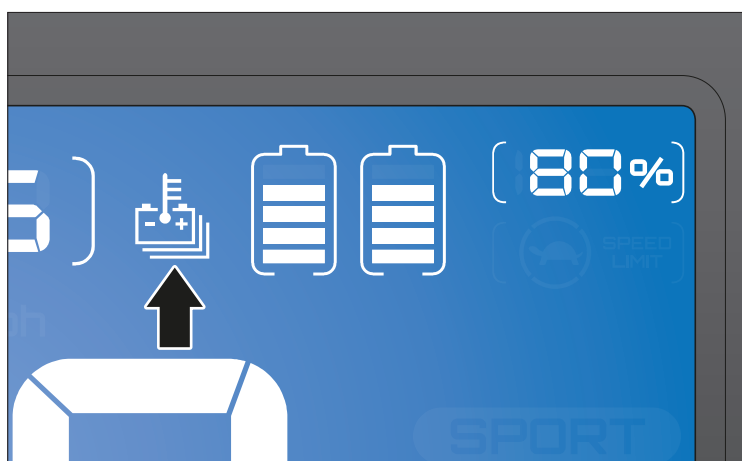
Clock

This part of the display shows the current time.



RANGE Indicator

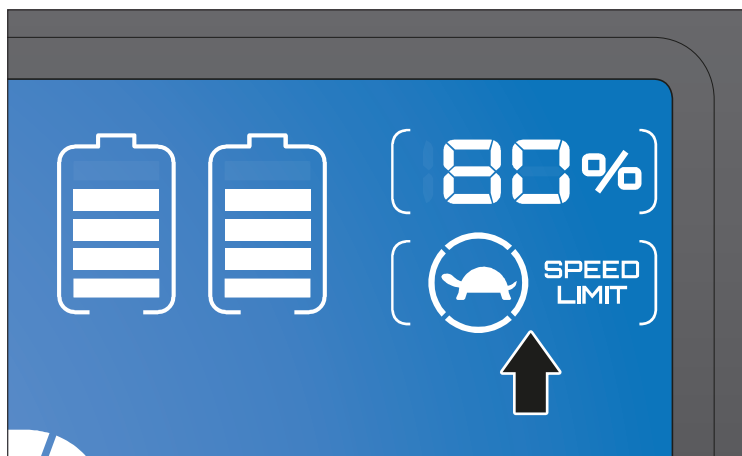
This part of the display shows an estimate of the distance that can be travelled, based on the remaining battery charge and the set riding mode.



Outlier battery temperature indicator

This warning symbol is activated when an abnormal battery temperature is detected.

Stop the vehicle to allow the battery to cool.



Motor torque limitation indicator

This warning symbol comes on when the performance of the vehicle is below the rated performance.



1.7 DISPLAY FUNCTIONS SELECTION

Using the "SET" and "MAP" buttons on the right-hand control panel, the following functions of the digital display can be accessed:

- Odometer mode selection
- Trip odometer reset (TRIP)
- Display unit of measure selection
- Clock setting

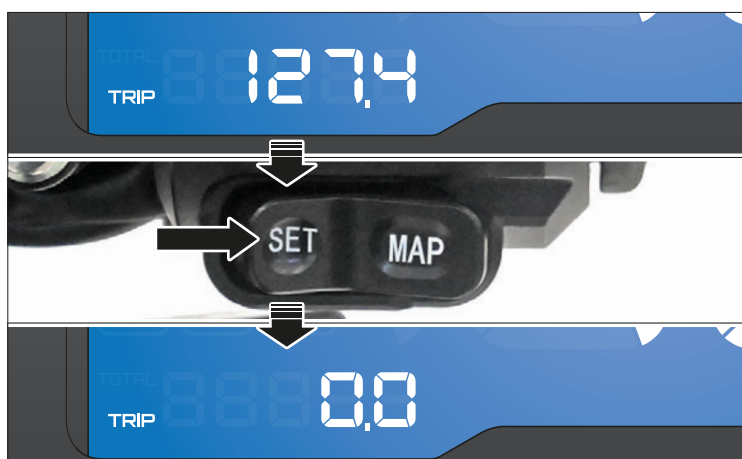


Odometer mode selection

The odometer of the digital display can show the partial (TRIP) or total (TOTAL) distance.

i To access this function, the vehicle must be in an active state ("READY" indicator lit).

With a **short** press of the "SET" button, it is possible to switch from one mode to the other.



Trip odometer reset (TRIP)

i To access this function, the vehicle must be in an active state ("READY" indicator lit).

While the odometer is in partial mode (TRIP), it can be reset by a **long** press on the "SET" button.



Display unit of measure selection

The units of measure in which the digital display shows information (temperature, speed, distance, consumption) can be selected between the international and Imperial systems.

i To access this function, the vehicle must be switched on but **NOT** in an active status ("READY" indicator off).

The units of measure in the digital display can be changed by a **long** press on the "SET" button.

With the international system, the units of measure are:

- Temperature: °C
- Speed: km/h
- Distances: km
- Consumption: Wh/km

With the Imperial system, the units of measure are:

- Temperature: °F
- Speed: mph
- Distances: mi
- Consumption: Wh/mi



Clock setting

i To access this function, the vehicle must be switched on but **NOT** in an active status ("READY" indicator off).

To set the clock, proceed as follows:

- Enter the clock setting mode with a **long** press on the "MAP" button: the hour indicator flashes
- Press the "SET" button to move the hours forward
- Press the "MAP" button to confirm the hours setting and continue with the minutes setting: The minutes indicator flashes
- Press the "SET" button to move the minutes forward
- Press the "MAP" button to confirm the minutes setting and exit the clock setting mode.

i If no button is pressed for several seconds, the clock setting mode will be terminated.



2.1 TECHNICAL DATA

2.1.1 Dimensions



2.1.2 Technical Data

Technical Data		Fantic Issimo City	Fantic Issimo City Pro	Fantic Issimo City Max
MOTOR DATA	Model	E-POWER - 3.5 kW	E-POWER - 3.5 kW	E-POWER - 3.5 kW
	Engine type	Brushless permanent magnet synchronous motor	Brushless permanent magnet synchronous motor	Brushless permanent magnet synchronous motor
	Operating voltage	24 Volt	24 Volt	24 Volt
	MAX power	2.5 kW	3.0 kW	3.0 kW
TRANSMISSION	Number of sprocket teeth	Z14	Z15	Z15
	Number of rim teeth	Z52	Z49	Z49
	Chain	420 - 94 links	420 - 94 links	420 - 94 links
BATTERY	Model	40043	40043	40043
	Type	NMC	NMC	NMC
	Weight	12 Kg	12 Kg	12 Kg
	Range	72 km - 1 battery (143 km - second optional battery)	57 km - 1 battery (115 km - second optional battery)	115 km - 2 batteries
	Operating temperature	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C
VEHICLE DATA	Length	1876 mm	1876 mm	1876 mm
	Rear mudguard length	1898 mm	1898 mm	1898 mm
	Grips width	747 mm	747 mm	747 mm
	Mirror width	830 mm	830 mm	830 mm
	Wheel base	1281 mm	1281 mm	1281 mm
	Height	1276 mm	1276 mm	1276 mm
	Mirror connections height	1053 mm	1053 mm	1053 mm
	Seat height	800 mm	800 mm	800 mm
	Front tire pressure	200 kPa (2 bar)	200 kPa (2 bar)	200 kPa (2 bar)
	Rear tire pressure	220 kPa (2.2 bar)	220 kPa (2.2 bar)	220 kPa (2.2 bar)
	Weight in running order	96 kg (including battery)	96 kg (including battery)	108 kg (including 2 batteries)
	Maximum permissible weight	283 kg	283 kg	283 kg
	Maximum permissible weight at rear rack	5 kg	5 kg	5 kg
	Seats	2	2	2
	Transmission	420 D.I.D. - model 420D3	420 D.I.D. - model 420D3	420 D.I.D. - model 420D3
FRONT LIGHT ASSEMBLY DATA	Headlight	LED	LED	LED
	Turn signals	LED	LED	LED
	Dashboard lights / display backlighting	LED backlit display	LED backlit display	LED backlit display
TAIL LIGHT ASSEMBLY DATA	Tail light	LED	LED	LED
	Brake light	LED	LED	LED
	Turn signals	LED	LED	LED
	License plate light	LED	LED	LED

2.2 TIGHTENING TORQUES

2.2.1 Specific tightening torques

Component	Dimensions	Tightening torque	Remarks
Dashboard mounting self-tapping screws	Ø4x16	2.5 Nm (0.25 m·kgf, 1.8 ft·lbf)	
Dashboard bracket fastening screws	M6x16 (8.8) TBB	7.5 Nm (0.76 m·kgf, 5.5 ft·lbf)	
Dashboard bracket fastening screw	M5x16 (8.8) TBB	3.5 Nm (0.36 m·kgf, 2.6 ft·lbf)	
Handlebar fastening screws	M6x20 (8.8) Hexagon socket head cap screw	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Handlebar holder fastening screw	M8x40 (8.8) Hexagon socket head cap screw	25 Nm (2.5 m·kgf, 18 ft·lbf)	
Throttle control fastening screw - right steering switch	M5x25	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Left-hand steering switch fastening screw	M5x25	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Windshield and front cover fastening screws	M5x25 TBB	4 Nm (0.41 m·kgf, 3 ft·lbf)	
Front bonnet fastening screws	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Front shield fastening screws	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Headlight cover fastening screws	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Tail light fastening screws	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Front shield - inner shield fastening screws	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
	Ø4x45	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Bag hook fastening screw	M4x20 (8.8) Hexagon socket button head screw	2.5 Nm (0.25 m·kgf, 1.8 ft·lbf)	
Right flap fastening screw	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Front mudguard fastening screw	M6x16 (8.8) TBB	3 Nm (0.31 m·kgf, 2.2 ft·lbf)	
	M6x25 (8.8) TBB	3 Nm (0.31 m·kgf, 2.2 ft·lbf)	
Cable gland fastening screw on front mudguard	M6x30 (8.8) TB	3 Nm (0.31 m·kgf, 2.2 ft·lbf)	
Right and left footboard fastening screws	M6x16 (8.8) TBFL	5 Nm (0.51 m·kgf, 3.7 ft·lbf)	
	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
	Ø4x45	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Underbody fastening screws	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Handlebar lower ring nut pre-fastening	M30	20 Nm (2 m·kgf, 15 ft·lbf)	
Handlebar lower ring nut final fastening	M30	13 Nm (1.3 m·kgf, 9.6 ft·lbf)	
Upper steering ring nut tightening	M30	37.5 Nm (3.8 m·kgf, 28 ft·lbf)	
Steering plate fastening screws	M8x25 (8.8) Hexagon socket head cap screw	30 Nm (3.1 m·kgf, 22 ft·lbf)	
Front wheel axle fastening screws	M6 (10.9)	16 Nm (1.6 m·kgf, 12 ft·lbf)	
Front wheel axle	M14 (8.8)	60 Nm (6.1 m·kgf, 44 ft·lbf)	
Front brake disc fastening screws	M8x20 TBB	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Front brake lever fastening pin	-	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Front master cylinder collar upper fastening screw	M6x35 (8.8)	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Front master cylinder collar lower fastening screw	M6x22 (8.8)	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Front brake calliper fastening screws	M8x25 (8.8) Hexagon socket head cap screw	25 Nm (2.5 m·kgf, 18 ft·lbf)	
Front brake tube cable gland fastening screw	M6x10 (8.8) Hexagonal hollow button head screw	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	

Component	Dimensions	Tightening torque	Remarks
Braking distributor fastening screws	M5 (8.8) Hexagon socket head cap screw	5 Nm (0.51 m·kgf, 3.7 ft·lbf)	
Seat fastening screws	M6x16 (8.8) TBFL	5 Nm (0.51 m·kgf, 3.7 ft·lbf)	
Seat lock fastening screws	M6x25 (8.8) TBB	7.5 Nm (0.76 m·kgf, 5.5 ft·lbf)	
Seat locking cable fastening screw	M5x16 (8.8) TBB	5 Nm (0.51 m·kgf, 3.7 ft·lbf)	
Handle fastening screw	M6x70 (8.8) TB	5 Nm (0.51 m·kgf, 3.7 ft·lbf)	
	M6x60 (8.8) TB	5 Nm (0.51 m·kgf, 3.7 ft·lbf)	
Luggage rack cover fastening screws	M6x70 (8.8) TB	5 Nm (0.51 m·kgf, 3.7 ft·lbf)	
	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Rear side fastening screws	M6x16 (8.8) TBFL	5 Nm (0.51 m·kgf, 3.7 ft·lbf)	
	Ø4x16	1.5 Nm (0.15 m·kgf, 1.1 ft·lbf)	Upper side
	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	Lower side
Structural luggage rack fastening screws	M8x50 (8.8) Hexagon socket head cap screw	10 Nm (1.0 m·kgf, 7.4 ft·lbf)	
	Ø4x45	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
License plate holder fastening screw	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Luggage rack base fastening screws	M6x25 (8.8) TBB	7.5 Nm (0.76 m·kgf, 5.5 ft·lbf)	
Rear frame cover fastening screws	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Battery charger panel fastening screws	M6x16 (8.8) TBFL	7.5 Nm (0.76 m·kgf, 5.5 ft·lbf)	
Chain-cover fastening screws	M5x20 (8.8) TB	2.5 Nm (0.25 m·kgf, 1.8 ft·lbf)	
	M5x10 (8.8) TBB	2.5 Nm (0.25 m·kgf, 1.8 ft·lbf)	
Right motor access cover	M6x16 (8.8) TBB	3 Nm (0.31 m·kgf, 2.2 ft·lbf)	
Left motor access cover	M6x45 (8.8) Hexagon socket head cap screw	10 Nm (1.0 m·kgf, 7.4 ft·lbf)	
Rear shock absorber fastening screws	M10x45 (8.8) Hex head	46 Nm (4.7 m·kgf, 34 ft·lbf)	
	M8x30 (8.8) TBB	25 Nm (2.5 m·kgf, 18 ft·lbf)	
Rear wheel axle	M14 (8.8)	70 Nm (7.1 m·kgf, 52 ft·lbf)	
Rear brake disc fastening screws	M8x20 TBB	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Rim fastening screws	M8x20 TBB	23 Nm (2.3 m·kgf, 17 ft·lbf)	
Rear brake lever fastening pin	-	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Rear master cylinder collar upper fastening screw	M6x35 (8.8)	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Rear master cylinder collar lower fastening screw	M6x22 (8.8)	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Rear brake calliper fastening screws	M8x20 (8.8) TBB	25 Nm (2.5 m·kgf, 18 ft·lbf)	
Central kickstand clamp fastening screws	M8x120 (8.8) Hexagon socket head cap screws	25 Nm (2.5 m·kgf, 18 ft·lbf)	
Rear frame fastening screws	M8x20 (8.8) TBB	18 Nm (1.8 m·kgf, 13 ft·lbf)	
Rear compartment cover fastening screws	Ø4x16	1.5 Nm (0.15 m·kgf, 1.1 ft·lbf)	
Battery cable connection node fastening screw	Ø4x16	1.5 Nm (0.15 m·kgf, 1.1 ft·lbf)	
Upper and lower rear frame fastening screws	Ø4x16	1.5 Nm (0.15 m·kgf, 1.1 ft·lbf)	
Frame fastening bracket fastening screws	M10x12x15 (8.8)	36 Nm (3.7 m·kgf, 27 ft·lbf)	
	M10x40 (8.8) TBB	36 Nm (3.7 m·kgf, 27 ft·lbf)	
Buffer bracket fastening screws	M6x16 (8.8) TBFL	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	

Component	Dimensions	Tightening torque	Remarks
Fastening screws for left and right underbody supports	M6x25 (8.8) Hexagon socket head cap screws	7.5 Nm (0.76 m·kgf, 5.5 ft·lbf)	
Front shield support fastening screws	M6x20 (8.8) Hexagon socket head cap screw	7.5 Nm (0.76 m·kgf, 5.5 ft·lbf)	
Rear right swingarm fastening screws	M8x155 (8.8) Hexagon socket head cap screw	25 Nm (2.5 m·kgf, 18 ft·lbf)	
Rear left swingarm fastening screws	M6x16 (8.8) Hexagon socket head cap screws	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
	M6x25 (8.8) Hexagon socket head cap screws	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Sprocket fastening screws	M6x16 (8.8) Hexagon socket head cap screws	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Headlight and cover fastening screws	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Tail light fastening screws	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Rear turn signals fastening nuts	M10	4 Nm (0.41 m·kgf, 3 ft·lbf)	
Inverter fastening self-locking nuts	M6 (8.8)	2.5 Nm (0.25 m·kgf, 1.8 ft·lbf)	
Eyelets fastening screws to Inverter	M6x16 (8.8) TBFL	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Right flap fastening screw (USB socket)	Ø4x16	1.2 Nm (0.12 m·kgf, 0.9 ft·lbf)	
Keyless lock block fastening screw	M6x16 (8.8) Hexagon socket head cap screws	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Keyless lock block tear-off fastening screw	M6x16 (8.8)	10.5 Nm (1.1 m·kgf, 7.7 ft·lbf)	
Keyless control unit fastening screws	M5x16 (8.8) TBB	3 Nm (0.31 m·kgf, 2.2 ft·lbf)	
Horn fastening screw	M5x16 (8.8) TBB	3 Nm (0.31 m·kgf, 2.2 ft·lbf)	

 We recommend the use of Loctite® 243 for tightening the indicated fastener.

2.2.2 General tightening torques

General tightening torque specifications

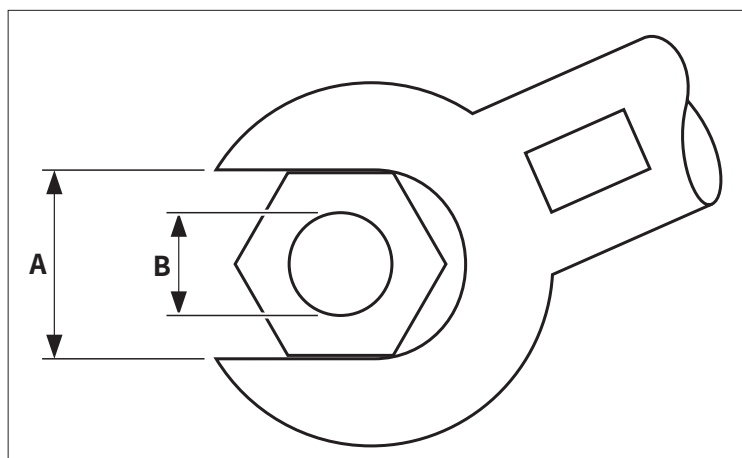
The table below contains tightening torques for standard nuts and bolts with standard ISO thread pitch.

i The tightening torques of components or special units can be found in the relevant chapters of this manual.

! To avoid deformation, tighten the bolt or nut assemblies gradually until the specified torque is reached.

! Unless otherwise specified, the tightening torques indicated are intended with clean and dry threads.

! The components must be at room temperature.



"A" (nut)	"B" (bolt)	General tightening torques		
10 mm	6 mm	6 Nm	0.6 m-kgf	4.3 ft-lbf
12 mm	8 mm	15 Nm	1.5 m-kgf	11 ft-lbf
14 mm	10 mm	30 Nm	3.0 m-kgf	22 ft-lbf
17 mm	12 mm	55 Nm	5.5 m-kgf	40 ft-lbf
19 mm	14 mm	85 Nm	8.5 m-kgf	61 ft-lbf
22 mm	16 mm	130 Nm	13.0 m-kgf	94 ft-lbf

A. Key opening
B. Thread outside diameter

Conversion table

i All specifications in this manual follow the International System (SI) and Metric System units.

Use the following table to convert the values expressed with units of the Metric System into values expressed with units of the English System.

Characteristic	Unit of the metric system	Factor of multiplication	Unit of the Imperial system
Tightening torque	m·kg	7,233	ft·lb
	m·kg	86,794	in·lb
	cm·kg	0.0723	ft·lb
	cm·kg	0.8679	in·lb
Counterweight	kg	2,205	lb
	g	0.03527	oz
Speed	km / h	0.6214	mph
Distance	km	0.6214	mi
	m	3,281	ft
	m	1,094	yd
	cm	0.3937	in
	mm	0.03937	in
Volume / Capacity	cc (cm ³)	0.03527	oz (IMP liq.)
	cc (cm ³)	0.06102	cu.in
	l (litres)	0.8799	qt (IMP liq.)
	l (litri)	0.2199	gal (IMP liq.)
Other	kg / mm	55,997	lb / in
	kg / cm ²	14.2234	psi (lb/in ²)
	degrees centigrade (°C)	9/5 + 32	degrees Fahrenheit (°F)

3.1 MAINTENANCE RULES

- ⓘ Always use original Fantic Motor spare parts and lubricants recommended by the manufacturer. Non-original spare parts can damage the vehicle.
- ⚠ Use only the specific tools designed for this vehicle.
- ⓘ Always use new gaskets, seals and O-rings during assembling.
- ⓘ After disassembling, clean the components with non-flammable thinners.
- ⓘ Lubricate all the work surfaces before assembling, except the tapered fittings.
- ⚠ Use only metric measuring tools for disassembling, overhaul and assembling operations. Metric screws, nuts and pins are not interchangeable with coupling parts having English units of measurement.
- ⓘ All surfaces with gaskets, oil seals and O-rings must be cleaned with special care.
- ⓘ Carefully examine all the retaining rings before replacing the deformed ones. Use the new piston pin retaining rings after each use.
- ⓘ After assembling, check that all components have been correctly installed and are working perfectly.
- ⓘ Always use high quality equipment. Use, for lifting the vehicle, equipment expressly made and complying with national and local laws and regulations.
- ⓘ In case of interventions that involve the electrical system, check the correct installation of electrical connections, in particular the earth and battery connections

3.2 PREPARATION FOR INTERVENTIONS

- ⓘ Before carrying out the disassembling operations, carefully clean the elements from dirt, dust, mud and foreign bodies.
- ♻ Use appropriate tools and cleaning products.
- ⓘ When dismantling the vehicle, always keep together all coupled elements that are subject to normal wear and tear, such as gears, complex mechanisms, friction and transmission elements. These coupled elements must always be reused together or completely replaced.
- ⚠ During the vehicle disassembling clean all the elements and place them in containers following the disassembling order, so as to facilitate assembling operations and allow a correct installation of all components. If necessary, mark parts or positions that could be exchanged with each other during assembling.
- ⚠ Keep all items away from heat sources.
- ⓘ Keep, during the operations, the tools at hand, possibly according to a predetermined sequence and never on the vehicle or in hidden or inaccessible positions.
- ⓘ Keep the working area tidy and clean.



- ⚠ Before carrying out any maintenance and/or replacement involving electrical components, it is mandatory to disconnect the vehicle batteries, as shown in the figure.

3.3 PERIODIC MAINTENANCE PROGRAMME

Position	Operation	1,000 km (600 mi)	5,000 km (3,100 mi)	10,000 km (6,200 mi)	15,000 km (9,300 mi)	20,000 km (12,400 mi)	25,000 km (15,500 mi)	30,000 km (18,600 mi)
Mapping check	Check availability of inverter software updates.	√	√	√	√	√	√	√
	Check availability of battery software updates.	√	√	√	√	√	√	√
	Check availability of dashboard software updates.	√	√	√	√	√	√	√
Battery charger	Verification of operation.	√	√	√	√	√	√	√
Front brake	Check its operation, the fluid level and absence of leakage in the vehicle.	√	√	√	√	√	√	√
	Replace the brake pads.	If worn up to the limit.						
Rear brake	Check its operation, the fluid level and absence of leakage in the vehicle.	√	√	√	√	√	√	√
	Replace the brake pads.	If worn up to the limit.						
Brake tubes	Check for cracks or damage.	√	√	√	√	√	√	√
	Check that the installation and tightening are correct.	√	√	√	√	√	√	√
	Replace.	If necessary.						
Brake fluid	Replace.	Every 2 years.						
Wheels	Check for misalignment and the presence of damage.	√	√	√	√	√	√	√
Tires	Check the tread depth and the presence of damage. Replace if necessary.		√	√	√	√	√	√
	Check the air pressure. Correct it if necessary.	√	√	√	√	√	√	√
Wheel bearings	Check that the bearings have no clearance.		√	√	√	√	√	√
Swingarm	Check its operation and absence of excessive clearance.		√	√	√	√	√	√
	Lubricate with lithium soap based grease.	Every 24,000 km (14,000 mi).						
Drive chain	Check the tension, alignment and conditions of the transmission chain.	Every 1000 km (600 mi). After washing the vehicle. After driving the vehicle in the rain or in wet areas.						
	Check the rim and sprocket.							
	Fully adjust and lubricate the drive chain with a specific lubricant.							
	Replace the chain if necessary.		√	√	√	√	√	√
Handlebar	Check the tightness of the components fastened on the handlebars.	√	√	√	√	√	√	√
Handlebar bearings	Check the bearing clearance and the handlebar smoothness. Adjust if necessary.	√	√	√	√	√	√	√
	Lubricate with lithium soap based grease.	Every 24,000 km (14,000 mi).						

Position	Operation	1,000 km (600 mi)	5,000 km (3,100 mi)	10,000 km (6,200 mi)	15,000 km (9,300 mi)	20,000 km (12,400 mi)	25,000 km (15,500 mi)	30,000 km (18,600 mi)
Fasteners of the frame parts	Make sure that all nuts, bolts and screws are properly tightened.	√	√	√	√	√	√	√
Brake levers rotation pin	Lubricate with silicone grease.		√	√	√	√	√	√
Central kickstand	Check its operation.		√	√	√	√	√	√
	Lubricate with lithium soap based grease.		√	√	√	√	√	√
Fork	Check its operation and the absence of oil leaks.	√	√	√	√	√	√	√
Rear shock absorber	Check its operation and the absence of oil leaks in the shock absorber.	√	√	√	√	√	√	√
Rear suspension rotation points	Check the function of the upper and lower silent-blocks and the attachment of the screws of the upper and lower shock absorber mountings.		√	√	√	√	√	√
Front brake and rear brake switches	Check its operation.	√	√	√	√	√	√	√
Moving parts and cables	Lubricate.		√	√	√	√	√	√
Throttle grip	Check its operation.	√	√	√	√	√	√	√
	Check the throttle grip clearance.	√	√	√	√	√	√	√
	Check the accelerator sheaths wear condition.		√	√	√	√	√	√
Lights, signals and switches	Check its operation.	√	√	√	√	√	√	√
	Adjust the headlight beam.	√	√	√	√	√	√	√

Subsequent servicing (over 30,000 km/18,600 mi) MUST be carried out every 5,000 km (3,100 mi) with the same interventions as those indicated in the maintenance schedule for the last servicing for precisely 30,000 km (18,600 mi).

3.4 CLEANING THE VEHICLE

Proceed as follows:

- Disconnect and remove the batteries.
- Remove coarse dirt such as earth, pebbles, sand, grass, etc. with a gentle jet of water.

 **Do not use the pressure washer or pressurized water jets.**

- Allow the vehicle to dry.
- Spray the entire vehicle with a suitable cleaning agent.
- Thoroughly rinse each part of the vehicle with a gentle jet of water.
- Washing with water can be supplemented by the use of a sponge or cloth.
- Allow the vehicle to dry.

Chain cleaning:

- Pour a few drops of chain cleaner onto a clean, lint-free cotton cloth.
- Rub the cloth on the chain.
- Advance the chain and wipe the soaked cloth over the remaining part of the chain.
- Turn the rear wheel very slowly in the direction of travel to distribute the detergent.
- Allow the detergent to evaporate for about 1 hour.

Chain lubrication:

- Lubricate the chain with a suitable product (consult your dealer).
- Make sure that the entire chain has been lubricated.
- Remove excess lubricant from the chain with a clean, dry, lint-free cotton cloth.

 **Using excessive amount of lubricant or an inappropriate product can cause the brake disc to drip and foul, greatly reducing braking effectiveness.**

 **Use ONLY lubricants expressly indicated for motorbike chains.**

Rims and brake discs cleaning:

- Clean rims and brake discs with a suitable degreaser (consult the dealer).
 - Clean residual dirt manually with a clean, lint-free cotton cloth, using a suitable cleaning agent.
- Spray the entire vehicle with a suitable spray wax or similar protective product.

After the action time prescribed on the product used has passed, polish the vehicle with a clean, lint-free cotton cloth.

Manually clean the brake discs with a clean, dry, lint-free cotton cloth using a suitable degreaser.

 **The presence of spray wax or other protective products on brake discs considerably reduces braking effectiveness. Clean the brake discs with a suitable degreaser. Consult your dealer.**

The following components must not be treated with protective products:

- Brake pads.
- Brake discs.
- Grips and brake levers.
- Seat.
- Tires.

 **Wash the frame covers with water and neutral soap.**

3.5 TIRES

3.5.1 Tire pressure check

The vehicle is equipped with tubeless tires.

Check tire pressure regularly and adjust it if necessary before travelling.

- Front tire pressure **2 bar**
- Rear tire pressure **2.2 bar**

Also check for cuts in the tire sidewalls or uneven wear. In that case, contact authorised workshops for replacement.



Always check tire pressure when cold, incorrect pressure causes abnormal tire wear and makes riding dangerous.



The tire must be replaced when the tread reaches the wear limit stipulated by current standards.



3.5.2 Tire valves check

Check the position of the tire valves: they must be straight and point towards the centre of the wheels.

