

MM G510.1000



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1 INTRODUCTION

1.1 Advantages

- Use of torque measurement, pedal-assist speed measurement and wheel-speed measurement; the system has a dual feedback protection of the speed signals to ensure safety and reliability of the system
- High starting torque, maximum torque of more than 160 N.m, especially suitable for hill climbing
- High efficiency, low power consumption, longer range
- Low noise, smooth operation

1.2 Scope of Application

The drive unit works properly in the following environmental conditions:

- Ambient temperature: -20 to + 45°C ;
- Relative humidity: 15–95 % RH;

i The function of the product is impaired by the presence of any major caustic gas, any medium that affects the product's electrical insulation properties or any high-intensity magnetic field.

1.3 Product Naming Protocol

There is a badge on the housing, showing information as follows:



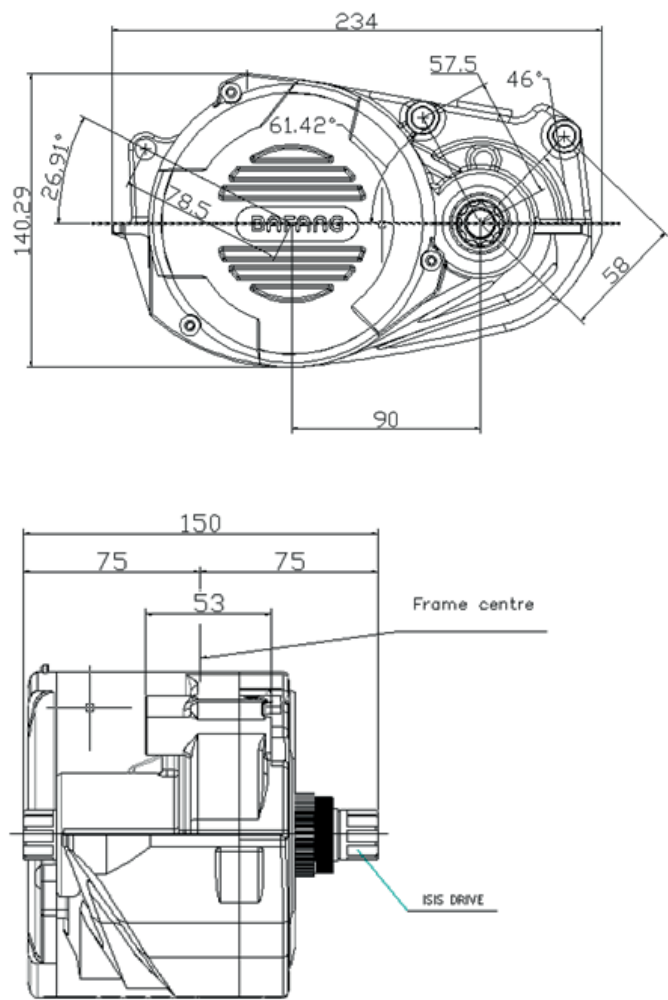
- A** MM: Mid motor
- B** G510: Motor model
- C** 1000: Rated motor power
- D** 18: Stator turns
- E** 027: Connection combination sort
- F** F3: Measurement and control equipment number
- G** R320: Production date, 20th March, 2017
- H** 0001: Production serial number, ranging from 0000 to 9999; 0001 is the production serial number of the first motor

Labelling part : QR code+48V

1.4 Drive Unit Appearance



1.5 Drive Unit Structure and Dimensions








CL: 48/70mm

1.6 Main Technical Parameters

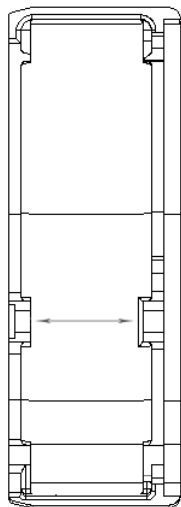
Drive unit model	MM G510.500	MM G510.750	MM G510.1000	MM G510.1300
Rated voltage (V)	48	48	48	52
Rated power (W)	500	750	1000	1300
Rated efficiency (%)	≥80%	≥80%	≥80%	≥80%
Rated rotating speed (rpm)	140±5	140±5	140±5	165±5
Maximum torque (Nm)	≥100	≥140	≥160	≥160
Chain wheel	40T / 42T / 44T / 48T			
Noise (dB)	≤55			
Water-proof grade	IP65			
Certification	CE ROHS / EN14766 / EN14764			
Operating environment	-20℃~45℃			

2 INSTALLATION

2.1 List of Tools to be used

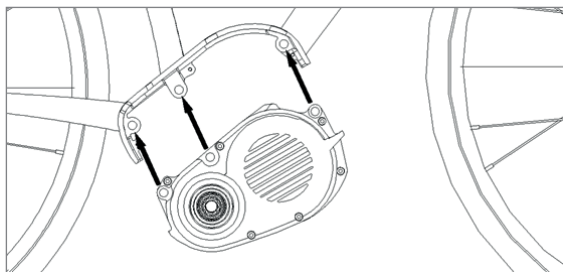
Use of the Tools	Tools	
To fasten screw onto the frame adapter and the drive unit		Internal hexagonal wrench
To fasten nuts onto the frame adapter and the drive unit		Socket spanner
To install chain cover		Cross screwdriver
To fix and remove the chain wheel lock nut		Dedicated tool
To fasten M15 bolt on the crank mounting		Internal hexagonal wrench

2.2 Welding Frame Adapter



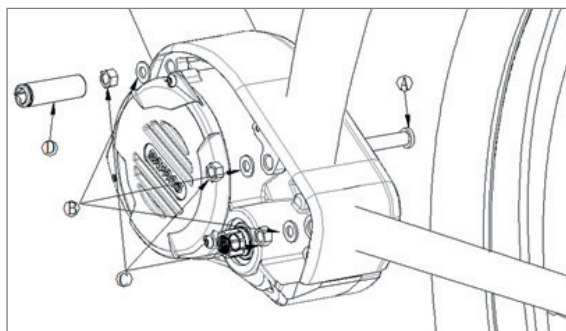
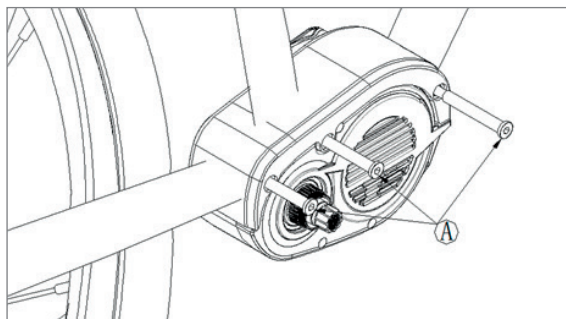
IQC inspection specification for the frame adapter is 53.0 (+0.3/ 0). After welding, the frame adapter need to heat treat together with bicycle frame to ensure the dimension of drive unit installation, the concentricity and the location of mounting hole. It is not allowable to there is paint on the six mounting surfaces and in the six mounting holes and M4 threaded hole of the frame adapter. The three M4 screw holes in the frame adapter shall not be deformed which are used to mount plastic cover.

2.3 Mounting Drive Unit



Align the three mounting holes of the drive unit with the mounting holes in the bike frame and mount the drive unit onto the bicycle frame.

Pay attention to the outgoing directions of the cables. Please note that the cables should not be squeezed by the drive unit.

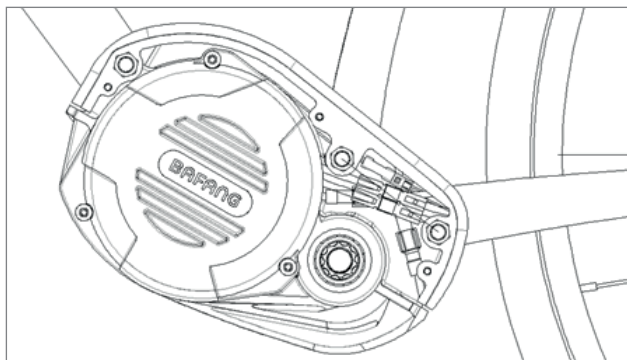


- A M8 dedicated screw stem
- B M8 flat washer-A level
- C M8 lock nut
- D dedicated socket spanner

1) Align the three mounting holes of the drive unit with the mounting holes in the bike frame.
From the right of the bike frame, insert the three dedicated M8 screw stem into the three mounting holes in the bike frame and the drive unit, and out from the left.

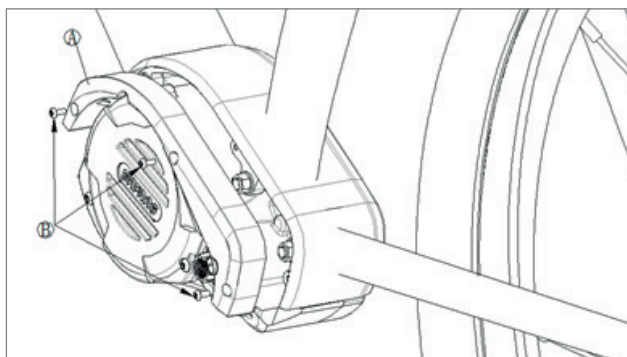
2) From the left side, fasten the three M8 lock nuts and washers onto the screw stem, tighten torque is 35N.m

2.4 Cable Connection



Connect the connectors of all cables to the connectors of the cables of drive unit (the method of cable arrangement shall be suit for frame adapter. The power bus, which is made up of a positive battery cable, a negative battery cable and battery communication cables (optional), is connected to the battery cables at the drive unit). After cables connection, place the cables neatly.

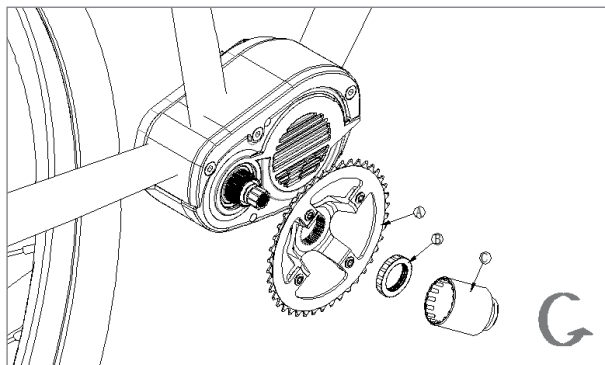
2.5 Mounting Drive Unit Cover



- A Motor cover
- B cross recess pan head screw M4*8

Use the three M4*8 bolts to fasten drive unit cover into the frame adapter. Tighten torque: 1.5 N.m

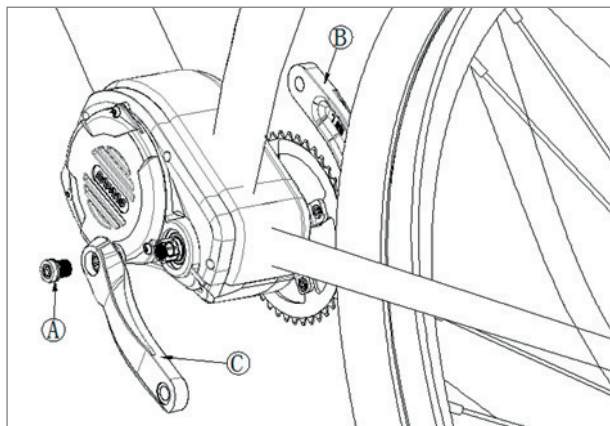
2.6 Chain Wheel Parts Installation



- A chain wheel parts
(depend on customer's
requirement)
- B spline nut
- C dedicated tool

Chain wheel installation: align spline teeth of the drive unit with spline teeth on the chain wheel parts and insert chain wheel, use dedicated tool to fasten anticlockwise the spline nut onto the drive unit, tighten torque is 35N.m

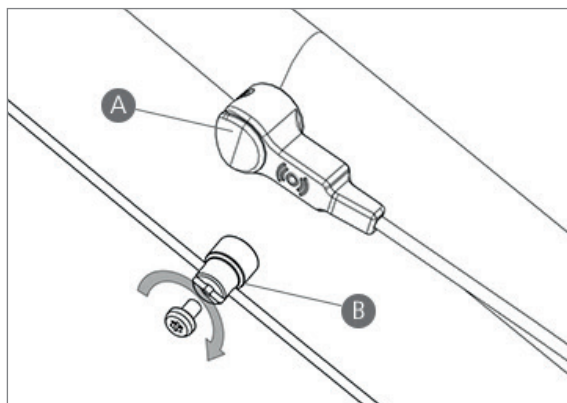
2.7 Crank Installation



- A water-proof M15 internal
hexagonal screw
- B right crank (depending
on the customer's requi-
rement)
- C left crank (depending on
the customer's require-
ment)

Fasten the right crank onto the bottom bracket on the right with a M15 inner hexagonal bolt, tighten torque is 45-50N.m (450-500kgf.cm), Install the left crank in the same way.

2.8 External Speed Sensor Installation SR SD021.01



- A Speed sensor
- B Magnet for the speed sensor

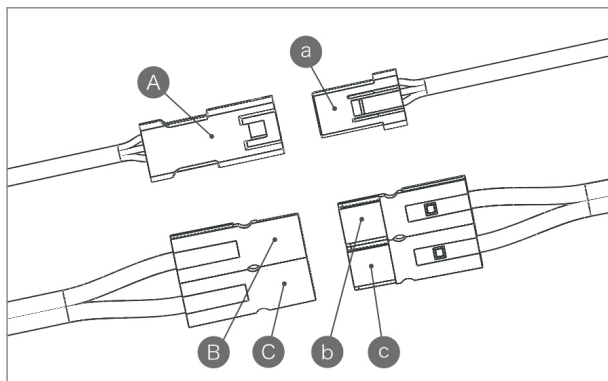
Fasten the mounting screws through the speed sensor and with a cross screwdriver. Tightening the speed sensor onto the frame. Then place the rubber seal on the speed sensor hiding the screw. Torque requirement: 1.5-2 N.m.

(Note: Please make sure the gap between the speed sensor and the magnetic unit is between 10 and 20 mm. When the magnet is not the correct distance, this can cause Error 21)

Now place the magnet on the spoke of the wheel ensuring it is aligned to the middle of the speed sensor. And with a star key tighten the magnet in place. Torque requirement: 1.5-2 N.m.

3 CABLING

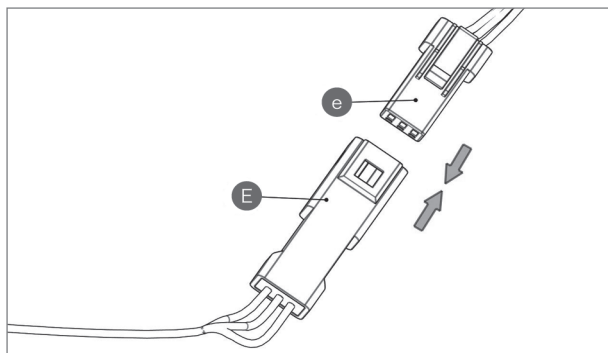
3.1 Connection of the Battery Cable to the Drive Unit



The power bus, which is made up of a positive battery cable, a negative battery cable and battery communication cables, is connected to the battery cables at the drive unit.

- A** male connector for the communication cables at the battery
- a** female connector for the communication cables at the drive unit
- B** male connector for the positive cable at the battery
- b** female connector for the negative cable at the drive unit
- C** male connector for the negative cable at the battery
- c** female connector for the negative cable at the drive unit

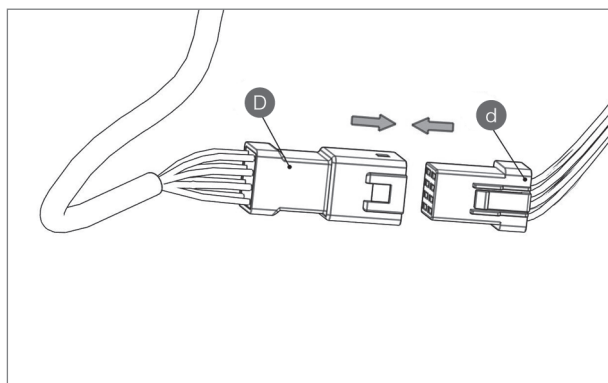
3.2 Connection of the Speed Sensor to the Drive Unit



- E** male connector at the speed sensor
- e** female connector at the drive unit for connection to the speed sensor

Link the male connector at the external speed-detecting sensor to the female connector for the external speed-detecting sensor cable at the drive unit.

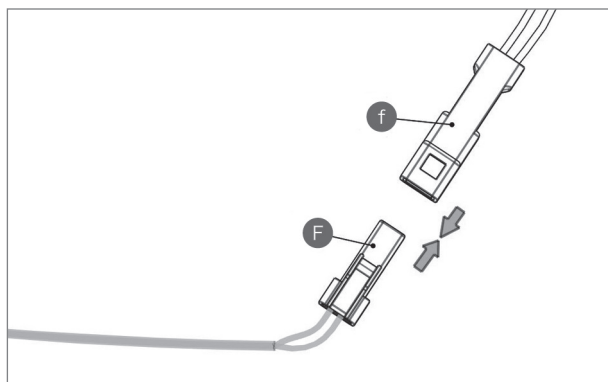
3.3 Connection of the EB-BUS to the Drive Unit



- Ⓓ male connector at the EB-BUS
- Ⓓ female connector at the drive unit for connection to the EB-BUS

Link the EB-BUS cable to the EB-BUS connector at the drive unit.

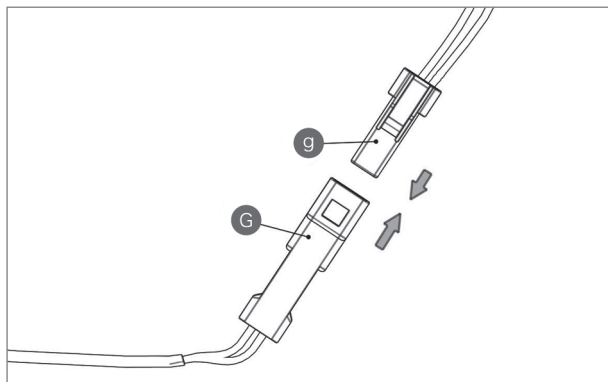
3.4 Connection of the Headlight Cable to the Drive Unit



- Ⓕ female connector at the headlight cable
- Ⓕ male connector for the headlight at the drive unit

Link the headlight cable to the connector for the headlight at the drive unit.

3.5 Connection of the Headlight to the Drive Unit



- G** male connector at the headlight cable
- g** female connector for the headlight at the drive unit

Link the headlight cable to the connector at the drive unit.

4 SERVICE AND WARRANTY POLICY

Suzhou Bafang Motor Science-Technology Co., Ltd (hereinafter referred to as the BAFANG) guarantees: During the warranty period, BAFANG gives warranty for products bought from BAFANG or dealers, as long as the reclamation concerns quality defects caused by the material or manufacture. (This only applies to BAFANG complete drive systems; BAFANG component parts are not covered by the warranty.)

Warranty Period and Scope

The warranty period starts from the date of leaving factory. It is 30 months for motors, and 18 months for controllers, displays, sensors and other electrical components.

The following faults are not covered by the warranty:

- Damage, failure and/or loss caused by refitting, neglect or improper maintenance, use for competition or commercial purposes; incorrect or improper use or accidents
- Damage, failure and/or loss due to transport by the purchaser
- Damage, failure and/or loss on/of the product caused by improper installation, adjustment or repair
- Damage, failure and/or loss not caused by the material or manufacture, but by incorrect use by the purchaser
- Damage, failure and/or loss to the exterior of the product that does not affect its function
- Damage, failure and/or loss caused by repair or installation undertaken by repair bases or dealers unauthorized by BAFANG
- Damage, failure or loss caused by normal wear and tear

BAFANG reserves the right to repair or replace faulty components, and is only obliged to repair or replace them.

If bike manufacturers or dealers encounter quality issues when using or selling BAFANG products, they can report the purchase order number and serial number of the product to BAFANG service department. who will check whether the products are under warranty or not. For products under warranty, BAFANG will provide free repair or give a replacement. If a repair is necessary after the expiry of the warranty period, BAFANG will invoice component parts, labor cost and shipping. If the BAFANG system needs repairing on a bike, please contact the bike manufacturer or dealer directly.

If this warranty statement is against a current law at the place of business of the dealer, the legislation currently in force shall prevail. BAFANG reserves the right to modify the terms without prior announcement.

For more information, please visit the company website: www.szbaf.com

NOTES
