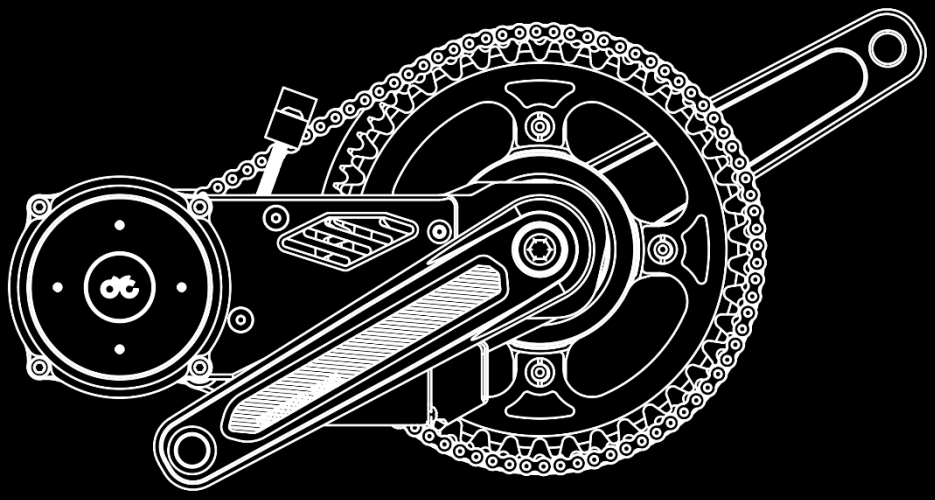

X1 PRO GEN 3

User Manual

CYC MOTOR
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SAFETY & PRECAUTION

General Safety

Kindly read through the entire user manual. This manual contains important information to reduce user risk as well as instructions for this product's proper use. Do not discard the manual but keep it for reference.

Note that the user's personal safety remains the user's responsibility and that the user must contact CYCMOTOR LTD or their official product dealer directly for any further guidelines or assistance.

Never interfere with the movable parts when the drive unit is connected to a power supply. This could result in serious injury if the system is accidently engaged.

This product is a powerful motor system that is dangerous for children and must be handled by an adult at all times. Small components and accessories may also present a choking hazard. Keep the motor system and accessories out of reach from children.

All components and accessories may only be replaced with identical components directly supplied by CYCMOTOR LTD or an official product dealer. CYCMOTOR LTD cannot be held liable for any damages as a result of using unapproved parts.

This product only complies with local, state, and federal regulations if speed limits are set accordingly. Ensure that you have set up your X1 Pro kit according to your local, state, and federal regulations when using and registering this drive unit on a public road/area.

Before the Ride

Ensure that the drive unit chain has the proper tension. Incorrect tension could cause jamming of the system and result in injury while riding. Inspect the chain tension regularly.

Ensure that the chains are properly lubricated. Cleaning and lubricating your chain with a regular bicycle chain cleaner, is advised regularly.

When connecting a power supply, make sure that the power supply is completely connected. Faulty connection could result in a short circuit and damage the controller or batteries.

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Inspect all electrical wires and plugs for damage regularly.

Secure all wires properly. Ensure that the throttle can bet twisted freely without friction and that the throttle can return to its original position without restriction. This is to prevent any uncontrolled response of the system.

Installation & Use

Do not install anything other than the parts and accessories that came with this drive unit. Doing so could damage the product.

The drive system can be activated and deactivated by holding down the on/off button of the display.

Avoid changing the bike gear (note: this is different from the drive unit's assist level) while the drive unit is powering the bike. This may lead to excessive wear on the chain and chain rings or other gear related failure.

When changing gears, use human input only. After the gear is changed, you may accelerate again with the throttle or continue using the PAS.

Take off with the appropriate assist level & bike gear.

This product is splash proof and rain proof but not **WATERPROOF**. Do not submerge it underwater.

Disclaimer

If you require any more information or have any questions about the user manual disclaimer, please feel free to contact us via email at support@cycmotor.com or call +852-3690-8938.

All the information contained in this manual is published in good faith and for general informational purposes only. CYCMOTOR LTD does not make any warranties about the completeness of this information and encourages further inquiries If needed. CYCMOTOR LTD will not be held liable for any losses and/ or damages in connection with the use of this product. **The use of this product is at own risk.**

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Please contact CYCMOTOR LTD if you are unsure about the assembly instructions or for any further assistance as CYCMOTOR LTD will be held liable for any losses and/ or damages created by the assembly.

Warning

Any issues with this product's performance or damages sustained to the product as a result of loading unauthorized firmware, will not be supported, or warrantied by CYCMOTOR LTD or any authorised product dealer.

Modifications of any kind is not advised. Any issues with this product's performance or damages sustained to be the product as a result of modifications will not be supported or warrantied by CYCMOTOR LTD or any authorized product dealer. If the product or its components have been found to be modified, warranty of the product may be limited in the case where troubleshooting and/ or replacement may be needed.

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TECHNICAL SPECFICIATIONS

Description

This product is a high-powered electric bike (ebike) drive unit kit which includes a programmed control unit and peripherals. This product is designed to be installed as a conversion system to convert standard bicycles into electric bicycles.

General

Rated Nominal Voltage	36V – 72V
Max. RPM at Crank	Approx. 350 RPM at 84V
Rated Power	3500W (CYC X6) / 5000W (CYC X12)
Colour	Anodized Black
Weight of Motor & Controller	3.8 kg
Total Weight with Crank set & BB	5.6 kg
Bracket Materials	7075-T6
Crank Arm Length	165mm or 175mm
Q Factor	190 for BB83
Control Method	FOC
Motor Sensor	Hall & Temp. Sensor
Chain ring	32T with 52T motor chainring 38T with 63T motor chainring 40T with 72T motor chainring
Compatibility	68-83mm, 100mm, 120mm BSA Threaded >109mm Pressfit (with adapter)

Motor

Motor Type	In-runner motor
No-load Motor Kv	150
Stator Lamination	0.35mm
Magnet	N45UH (>180 °C)
Efficiency (at 2N.m.)	92% at 70N.m.
Peak RPM	12,600 RPM at 84V
Epoxy sealed	Black Epoxy Potted Stator

Controller

Type	CYC X6 / X12 Controller
Operational Voltage	24V – 86V
Max. Input Current	65A (CYC X6 Controller) 110A (CYC X12 Controller)
Bluetooth	Connectivity via speed sensor
Mobile App	CYC Ride Control App for iOS & Google Play

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Mounting Position	Integrated between bottom bracket / mounted separately

Gearbox

First Stage Reduction	Hardened steel sun & ring gear with brass planetary gears 1:6
Second Stage Reduction	53T:11T = 4.82 63T:11T = 5.73 72T:11T = 6.55
Overall Reduction	1:28.9 (11/53T) 1:34.4 (11/63T) 1:39.3 (11/72T)

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Parts List

X1 Pro Gen 3 Motor Assembly with Chainring	
750c, SW102 or DS103 Display	or or
Thumb, Half-Twist or Full Throttle	or or
Magnetic Bluetooth Speed Sensor	
Bottom Bracket Spacers	
(OPTIONAL) Magnetic Brake Sensors	
(OPTIONAL) Controller Extension Wires	
Spindle Spacers	

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BB92 to BSA adapters	
Crankarms with crankarm bolts	
Left BB Cup	
Mounting Hanger	
Retaining Clip	
Spindle	

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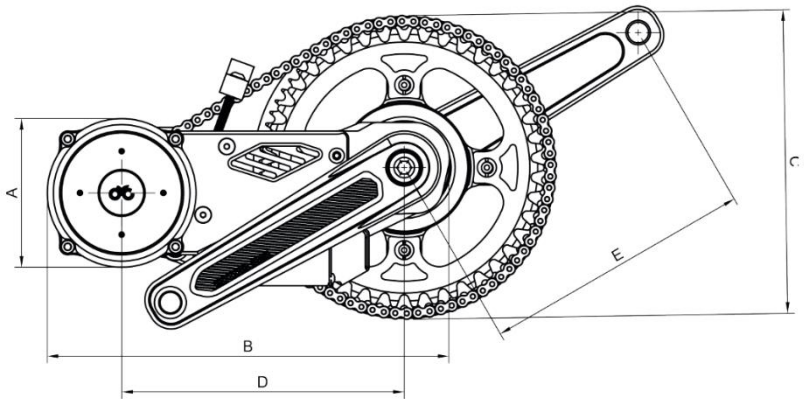
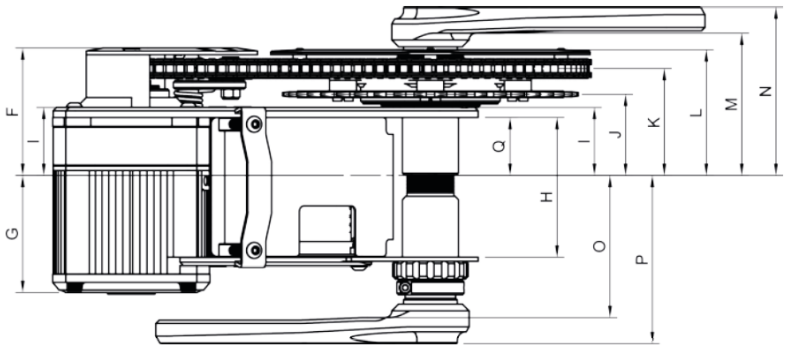
Dimensions

BSA Threaded 68/73/83mm Version

A	94mm
B	253mm
C	140mm / 165mm / 190mm
D	177.9mm
E	165mm / 175mm
F	82.9mm
G	62.5mm
H	83mm
I	47.5mm
J	55.3mm
K	70.6mm
L	81.81mm
M	91.6mm
N	107.1mm





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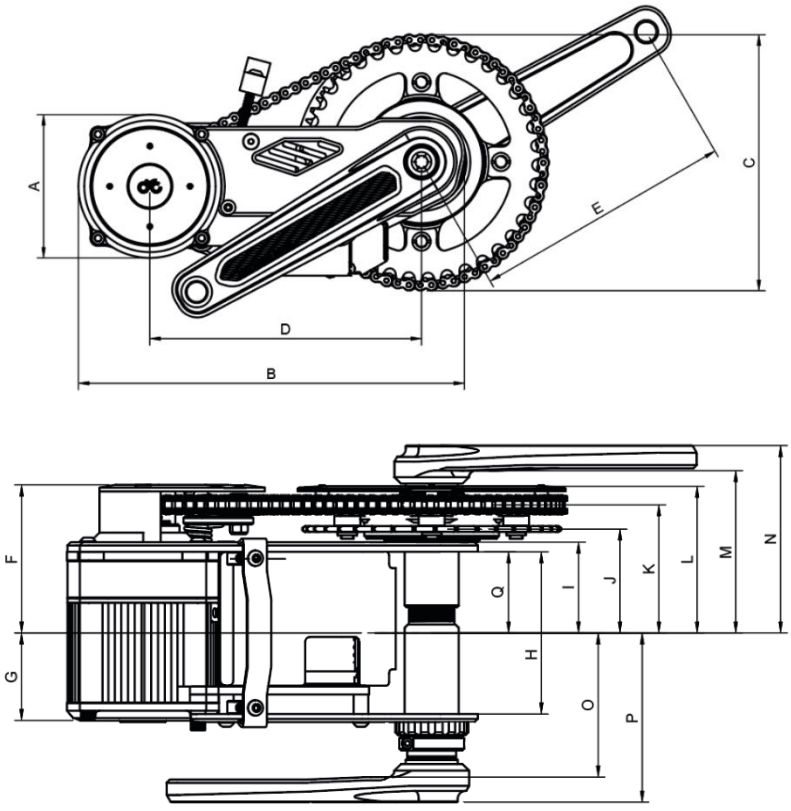
Dimensions

BSA Threaded 100mm Version

A	94mm
B	253mm
C	140mm / 165mm / 190mm
D	177.9mm
E	165mm / 175mm
F	91.4mm
G	54mm
H	100mm
I	56mm
J	63.8mm
K	79.1mm
L	90.3mm
M	100.1mm
N	115.6mm



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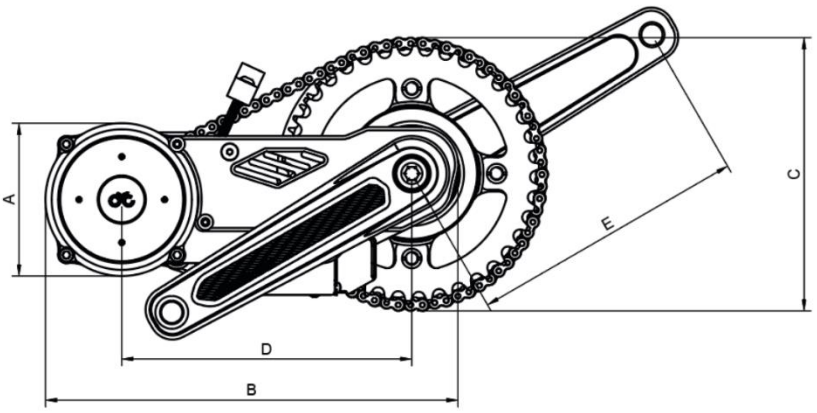
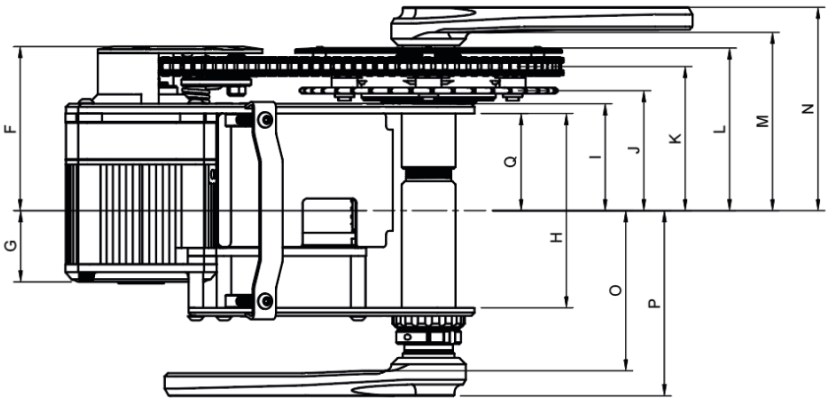
Dimensions

BSA Threaded 120mm Version

A	94mm
B	253mm
C	140mm / 165mm / 190mm
D	177.9mm
E	165mm / 175mm
F	101.4mm
G	44mm
H	120mm
I	66mm
J	73.8mm
K	89.1mm
L	100.3mm
M	110.1mm
N	125.6mm





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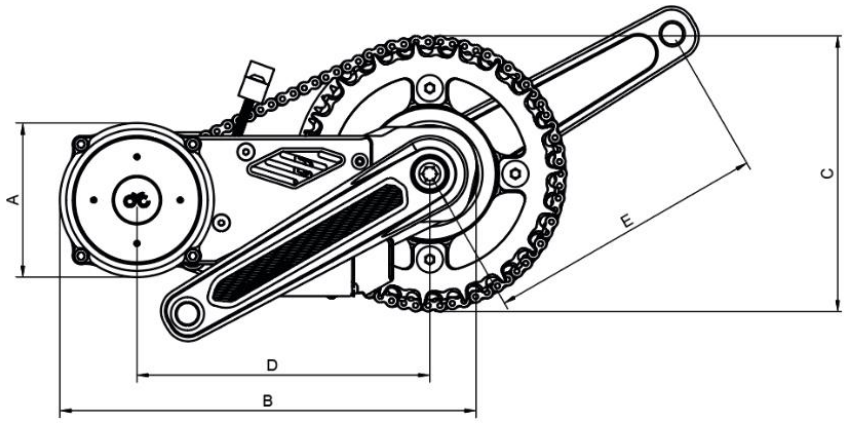
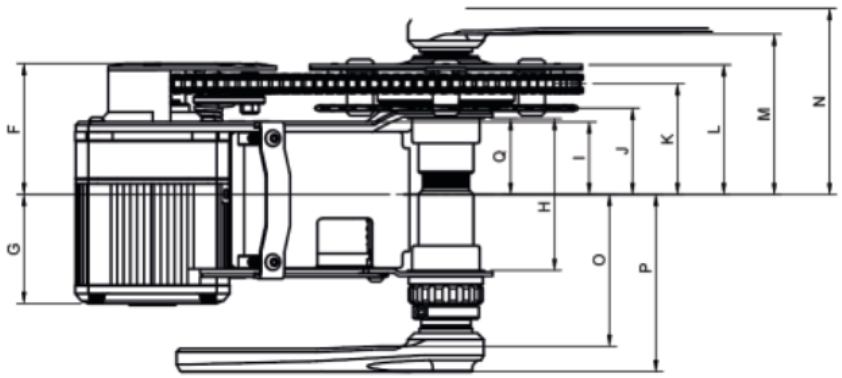
Dimensions

BB92 Version

A	94mm
B	253mm
C	190mm
D	177.9mm
E	165mm / 175mm
F	79.4mm
G	66mm
H	92mm
I	44mm
J	52.3mm
K	67.1mm
L	78.6mm
M	97.1mm
N	112.6mm





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INSTALLATION

Required Tools

Hex Keys (3mm & 8mm)	
Adjustable Wrench	
Crank Puller (for disassembly)	
PressFit Bottom Bracket Removal Tools (Only for BB92 version)	
16 Notch Bottom Bracket Tool	

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Operating Notice

RIGHT-HAND and LEFT-HAND sides are determined by the bike handle; Right-hand corresponds to the right handle.

Mounting Options for Controller

The CYC X6 controller can be mounted below the bottom bracket (pre-assembled by default) or mounted elsewhere on the bicycle frame at the user's discretion using controller extension wires that can be selected upon purchase or bought separately from the CYC online store or an authorized dealer.

NOTE: The controller comes preassembled at the bottom bracket between the mounting plates.

Adjusting the Width of the Bottom Bracket

In order for the CYC kit to fit on various different widths of bottom brackets, there are several spacers that come with the kit. These spacers are designed to provide the bottom brackets with necessary spacing between the motor brackets.

The preferred mounting set-ups are shown on the next page for 68mm and 73mm bottom brackets. Note that the spacers can be adjusted to accommodate different chain lines as needed.

Before you begin, ensure that you have removed the original crank set and bottom bracket from your frame. This includes any bearings and/or cups that might have been fitted previously. To install your CYC kit, you will need a clean bottom bracket shell on your frame.

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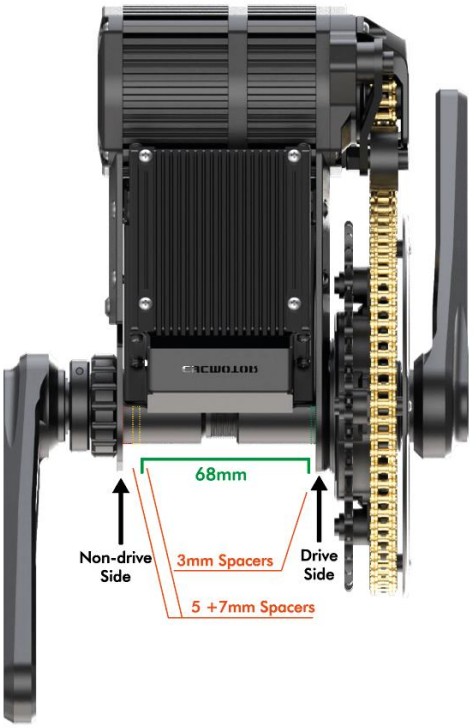
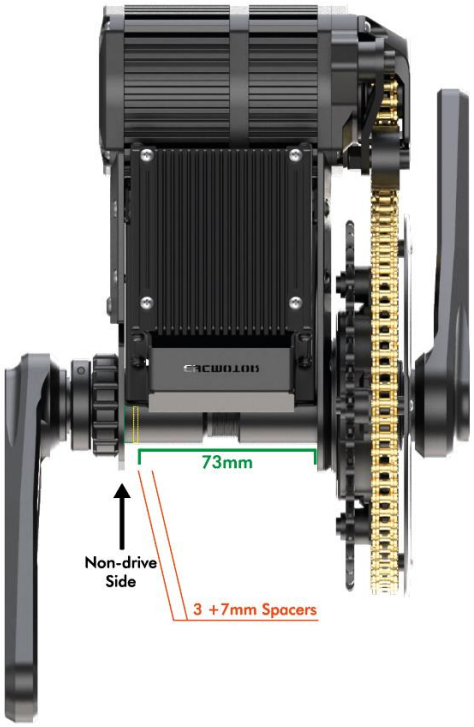
*68mm bottom brackets require a 7mm and a 5mm spacer on the left (non-drive side) and a 3mm spacer on the right (drive side) as shown.

*73mm bottom brackets require a 7mm & 3mm spacer on the left (non-drive side) and no spacer on the right (drive side) as shown.





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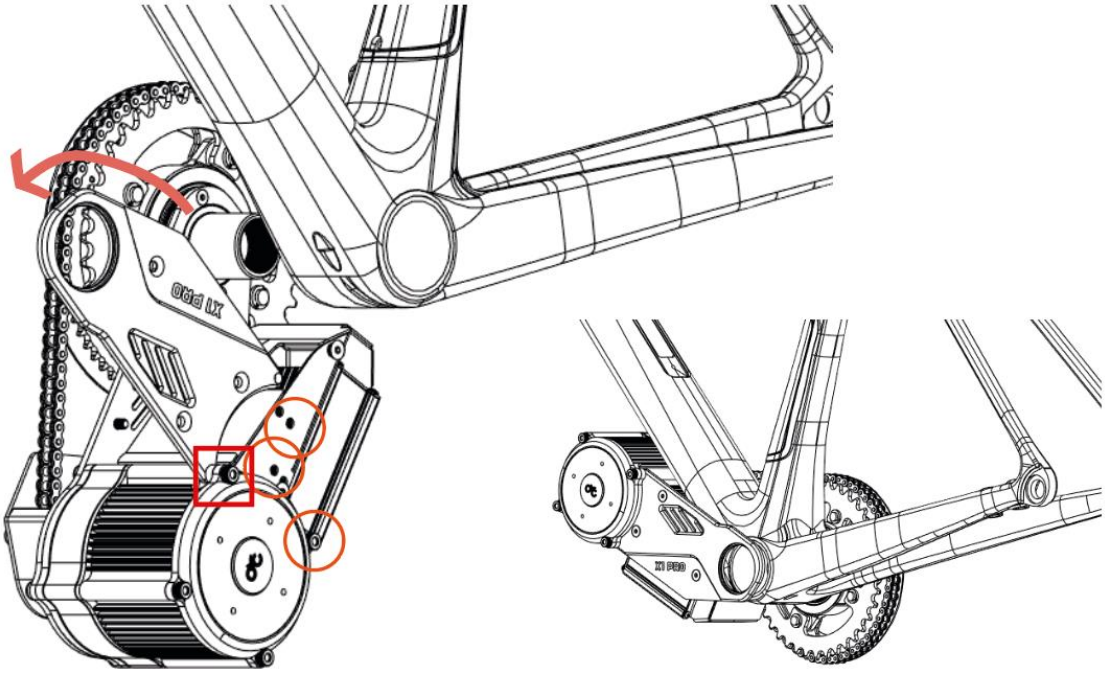
Installation of 68/73/83mm version

1.
   a. Remove the bolts as indicated within the circles in order to loosen the left (non-drive) side mounting bracket.
   b. Loosen the bolt as indicated within the square Do not remove completely.
   c. Gently swing the left mounting bracket upward and line up the motor body with your frame's bottom bracket shell.
   d. Insert the right (drive) side of the motor into the frame's bottom bracket shell.
   e. Once positioned into the frame's bottom bracket, swing the left mounting bracket back down and retighten all loosened/ removed bolts.



2.
   a. Line up the 3, 5, and/ or 7mm bottom bracket spacer/s provided outside the adapter bracket plate on the left (non-drive) side of the frame (spacer guidelines mentioned below).
   b. Thread the left (non-drive) side bottom bracket cup into the frame's bottom bracket shell through the spacer/s and the mounting bracket. Rotate clockwise.
      i. For a 68mm bottom bracket shell, place the 5mm & 7mm bottom bracket spacer over the left (non-drive) side bottom bracket cup before inserting it into the frame's bottom bracket shell.
      ii. For a 73mm bottom bracket shell, place the 3mm & 7mm bottom bracket over the left (non-drive) side bottom bracket cup before inserting it into the frame's bottom bracket shell.
      iii. For an 83mm bottom bracket shell, there is no need to add in any bottom bracket spacers on the left (non-drive) side.

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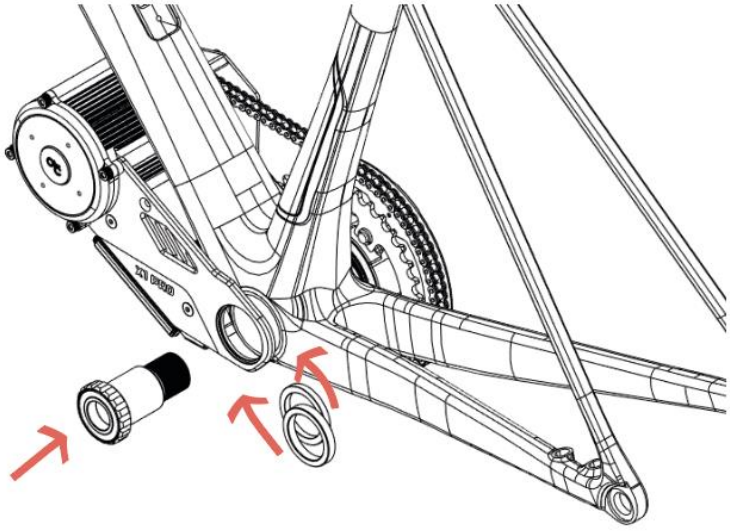
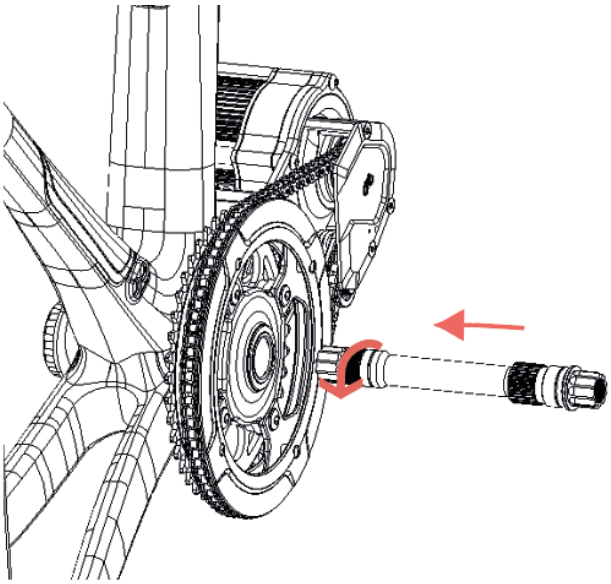
iv. For 100mm and 120mm version, no spacers are needed.

*Kindly note that the bottom bracket spacer placement mentioned above are provided as guidelines only for most general frames. You may place a spacer/s on either side of the bottom bracket cups according to your desired chainline.



3. Insert the spindle from the right (drive) side. Note that you will need to line up the splines from the chainring assembly. If your spindle does not go through or comes to a hard stop before being fully inserted, rotate the spindle slightly and try again. Once the spindle is



lined up, a soft tip hammer may also be used to get the spindle all the way through.

4.
    a. On the left (non-drive) side, thread in the lock ring.
    b. Use a 3mm hex key to lightly thread in the lock ring further. There is a small insertion made on the side of the lock ring for the hex key.

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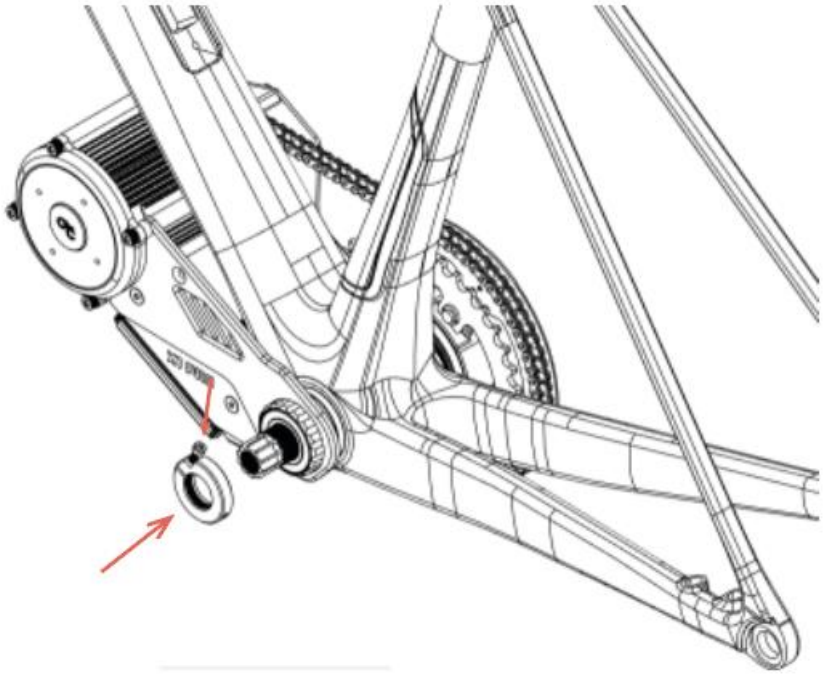
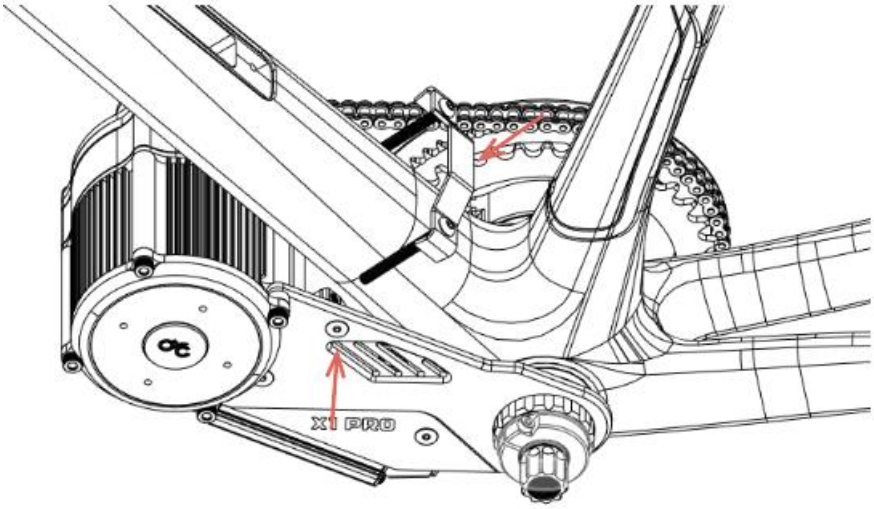
c. Lightly tighten the lock ring. The spindle should not be tensioned too much by the lock ring and should still be able to rotate freely by hand.



5. Install the motor hanger and place the rubber padding provided in between the motor and the frame.



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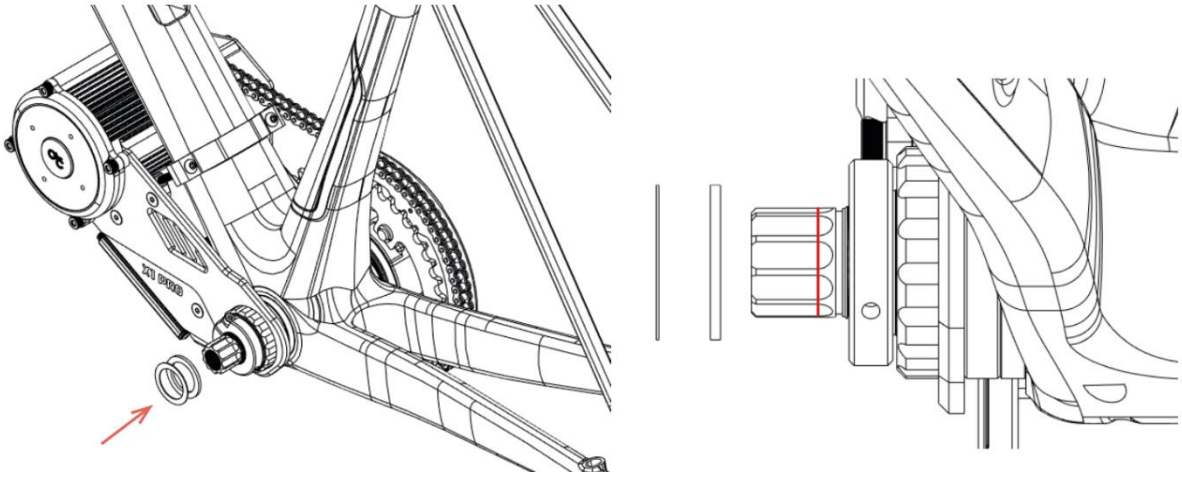
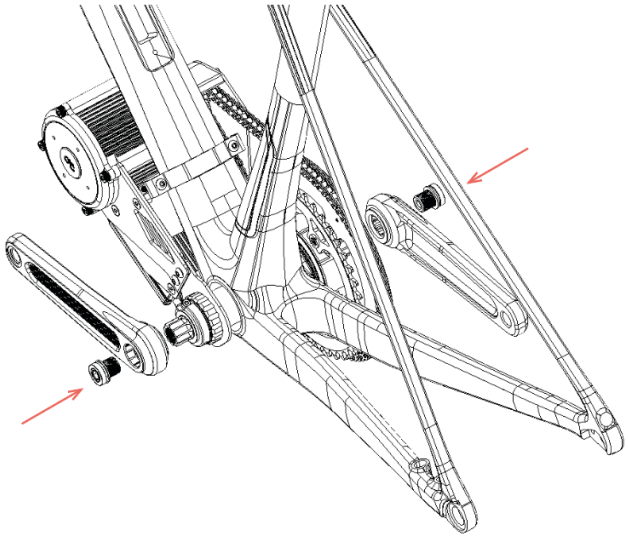
6.

a. Insert the spindle spacers on the spindle on the right (drive) side.
b. Insert spindle spacers over the spindle on the left (non-drive) side. Place spacers accordingly up to the indicated line.



7.

a. Install the left (non-drive) and right (drive) side crank arm according to the **L** and **R** indication on your crank arms.
b. Use the M15 ISIS Crank Arm Screws to tighten and secure the crank arms. Tighten both crank arms until it touches the spindle step on the drive side or the opposed spacers on the non-drive side. Tighten to torque specification. (25 – 30 N.m.)



8. Place your bicycle chain over the inner chain ring. Note that you will need to undo the quick link to split your chain.
9. Connect the peripherals and your battery.
10. Test run and have fun! Use responsibly.

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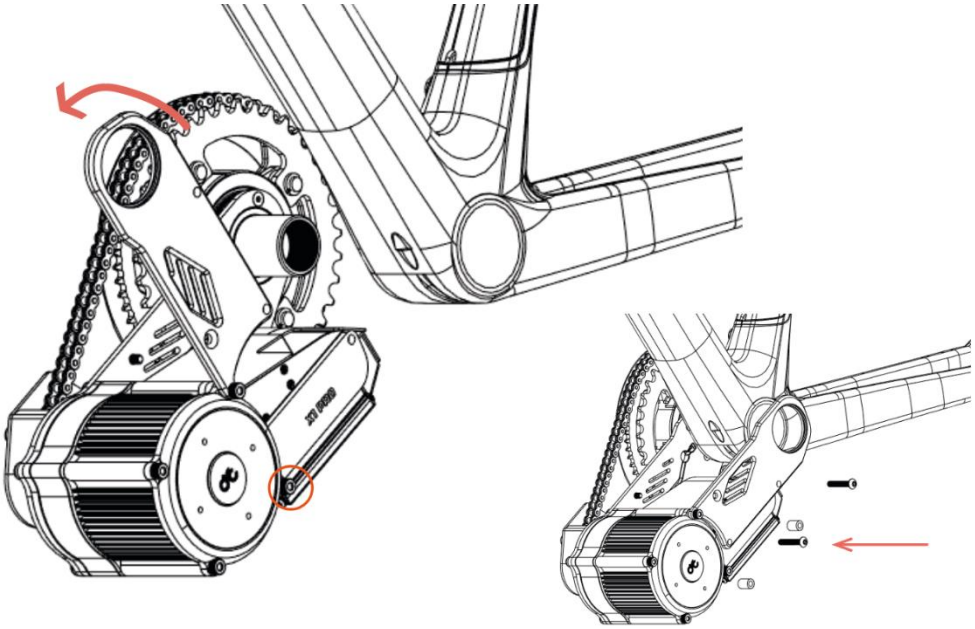
Installation of 100mm & 120mm version

1. Remove the bolts as indicated within the circles in order to loosen the left (non-drive) side mounting bracket, also slightly the remaining bolt holding the side plate so that the plate is able to pivot. Gently swing the left mounting bracket upward and line up the motor body with your frame at the bottom bracket. Insert the right (drive) side of the motor into the frame's bottom bracket shell. Once positioned in the frame's bottom bracket, swing the left mounting bracket back down and reinsert the respective bolts and spacers accordingly. Ensure to tighten each bolt properly.
    a. Add the required spacers if necessary. Thread the left (non-drive) side bottom bracket cup into the frame's bottom bracket shell through the spacer/s and the mounting bracket. Rotate clockwise. And tighten to the required torque of 40-50 N.m.



2. Thread the left (non-drive) side bottom bracket cup into the frame's bottom bracket shell through the spacer/s and the mounting bracket. Rotate clockwise.
    a. If applicable, line up the 3, 5, and/ or 7mm bottom bracket spacer/s provided outside the adapter bracket plate on the left (non-drive) side of the frame (spacer guidelines mentioned below).
    b. Kindly note that the bottom bracket spacer placement mentioned above are provided as guidelines only for most general frames. You may place a spacer/s on either side of the bottom bracket cups according to your desired chainline.

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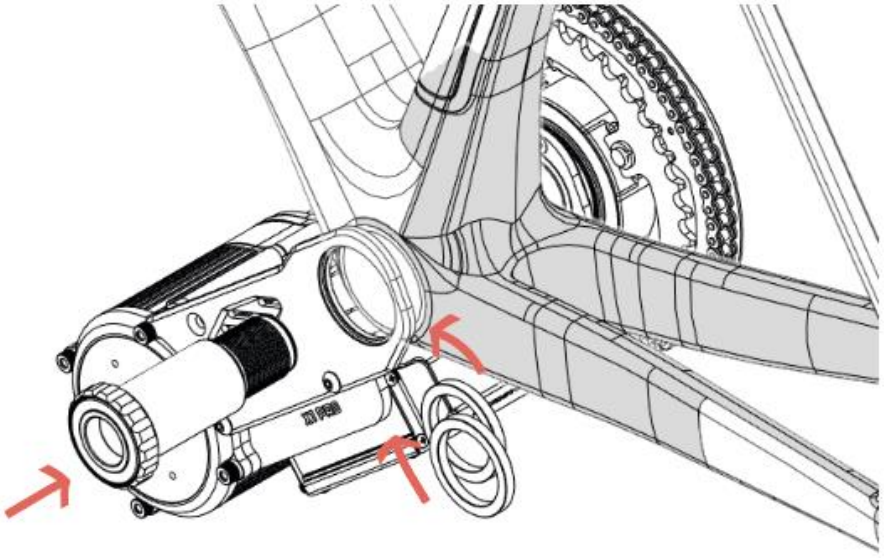
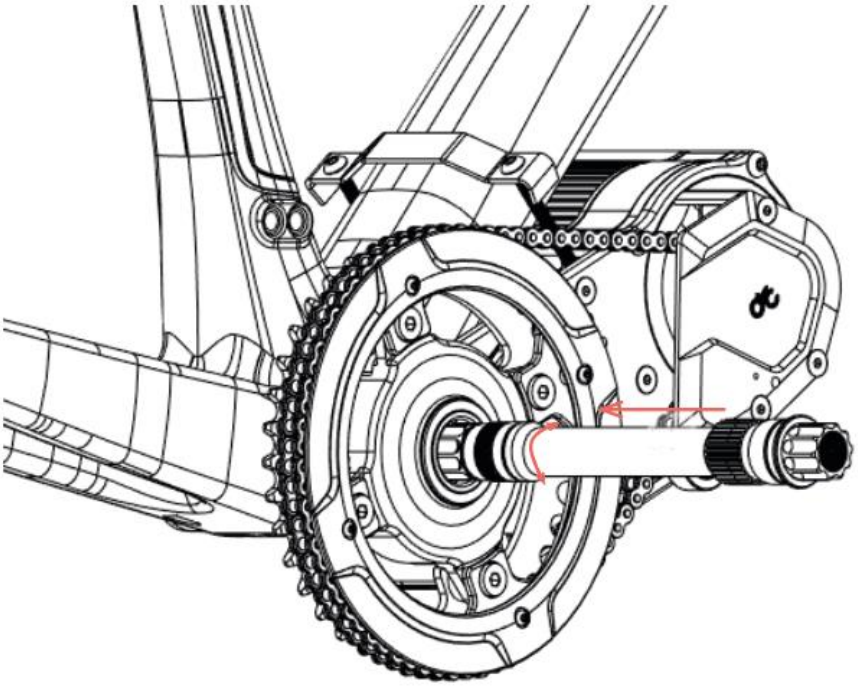


3. Insert the spindle from the right (drive) side. Note that you will need to line up the splines with the chainring assembly. If your spindle does not go through or comes to a hard stop before being fully inserted, rotate the spindle slightly and try again. Once the spindle is lined up, a soft tip hammer may also be used to get the spindle all the way through.



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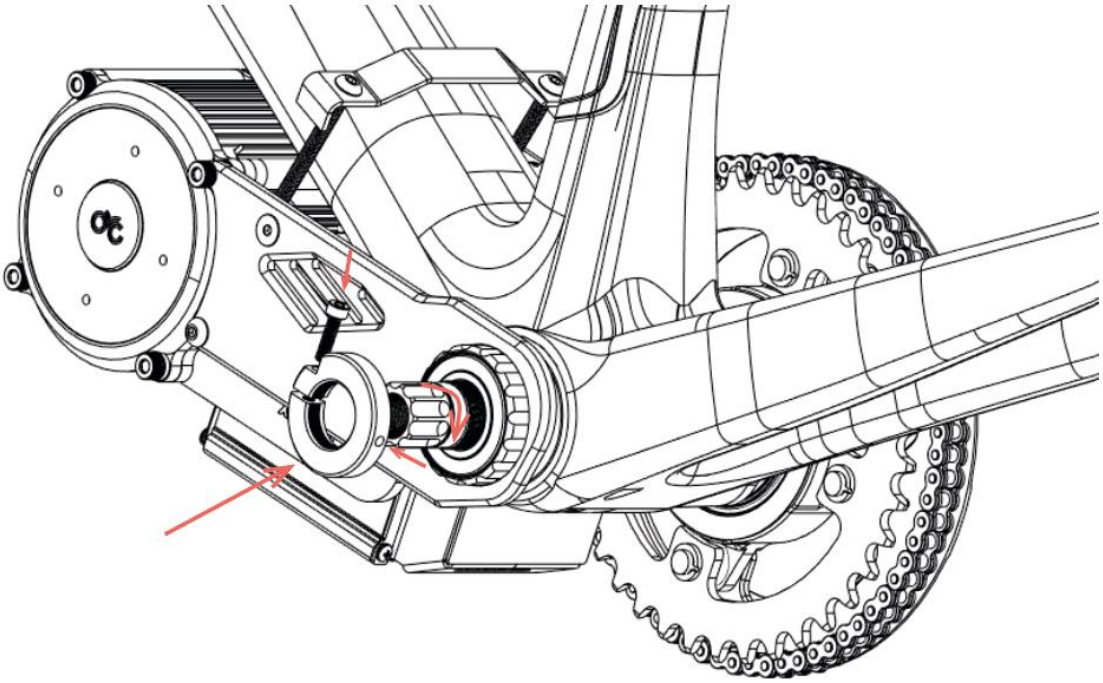
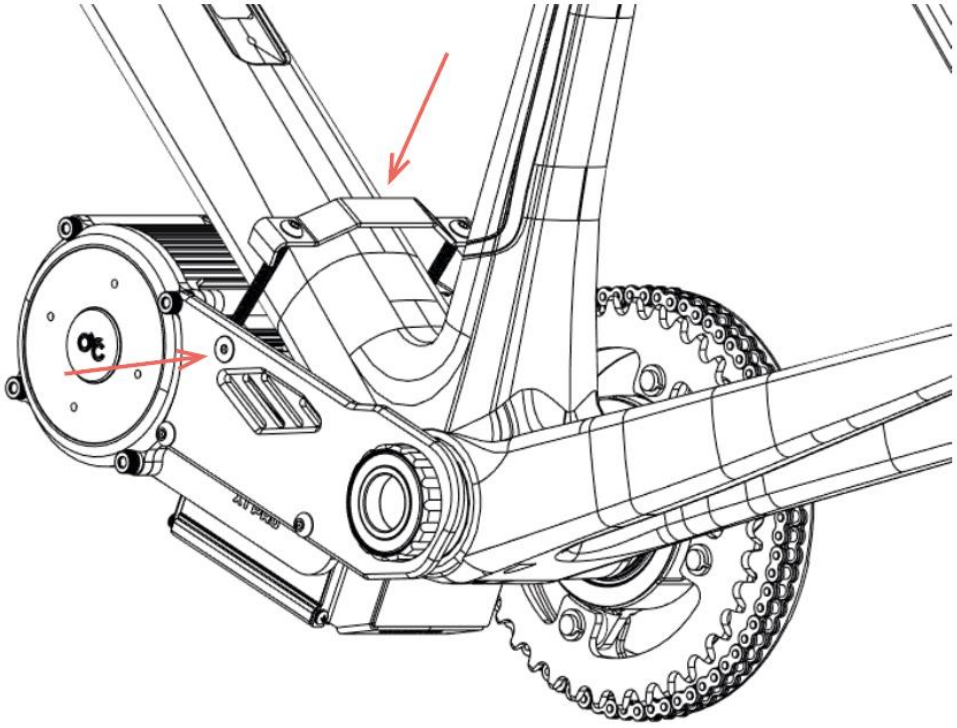
4. On the left (non-drive) side, thread in the lock ring. Use a 3mm hex key to lightly thread in the lock ring further via the small hole. Lightly tighten the lock ring.



5. Install the motor hanger (see page 29) and place the rubber padding provided in between the motor and the frame.



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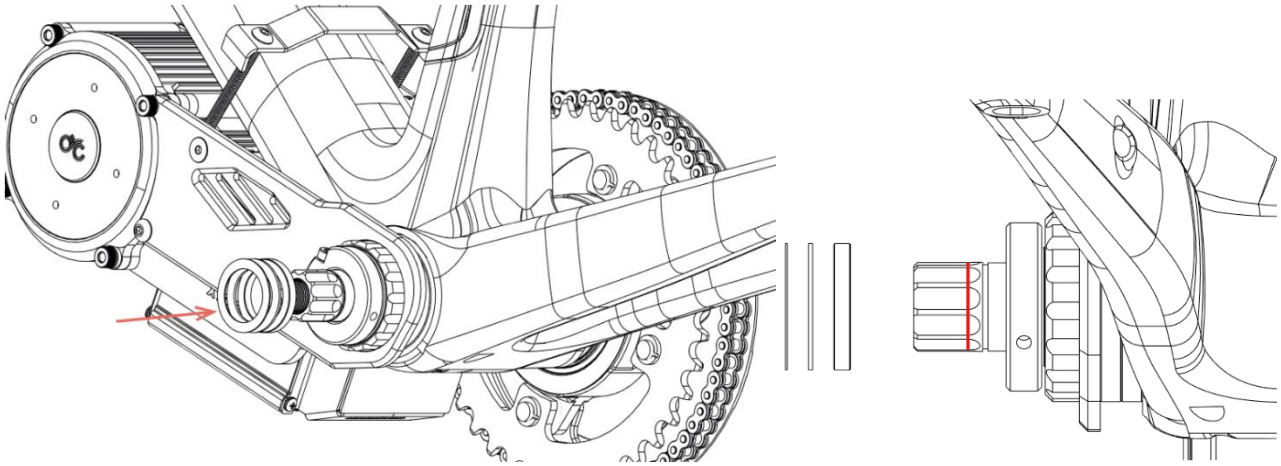
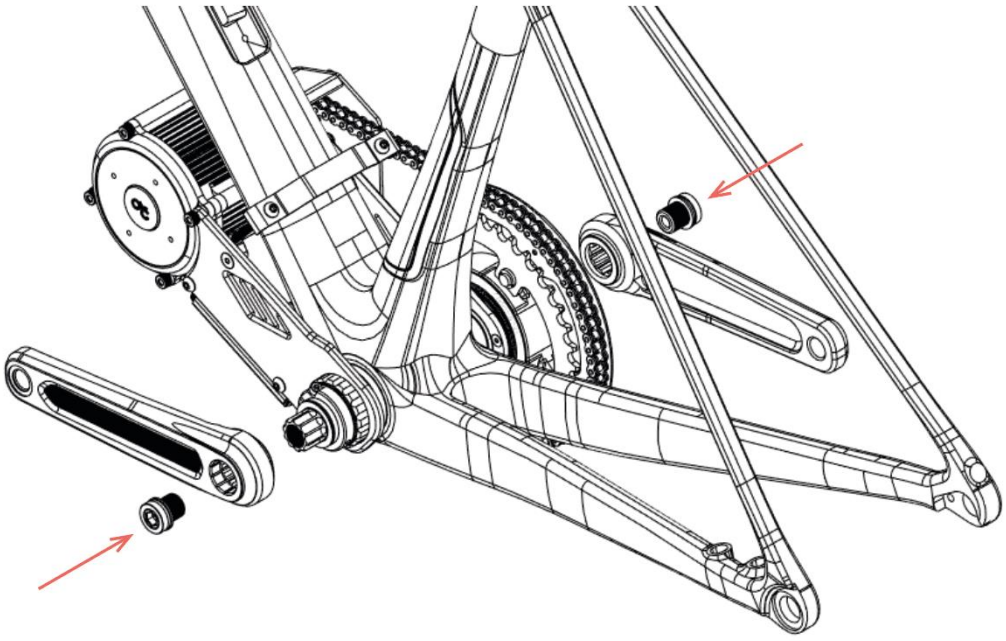
6. Insert spindle spacers on the spindle on the right (drive) side. Place the 120mm spindle spacer in between the left (non-drive) side crank arm and the lock ring before installing the crank arms.



7. Install the left (non-drive) and right (drive) side crank arm according to the **L** and **R** indication on your crank arms. Use the M15 ISIS crank arm screws to tighten and secure the crank arms.
8. Place your bicycle chain over the inner chain ring. Note that you will need to undo the quick link to split your chain.



9. Connect the peripherals (see page 31) and your battery.
10. Test and have fun! Use responsibly.

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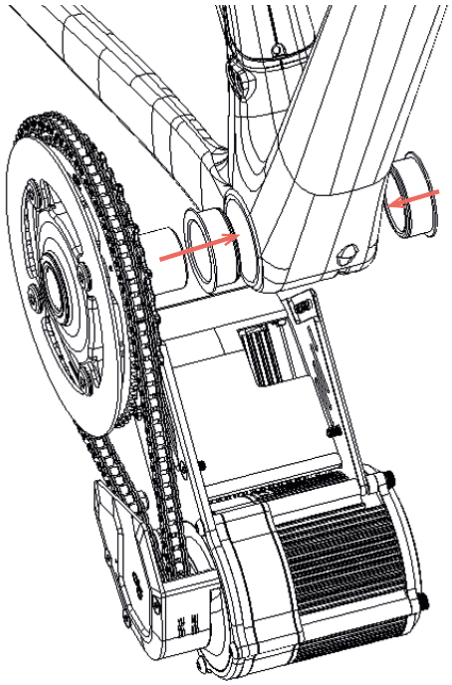
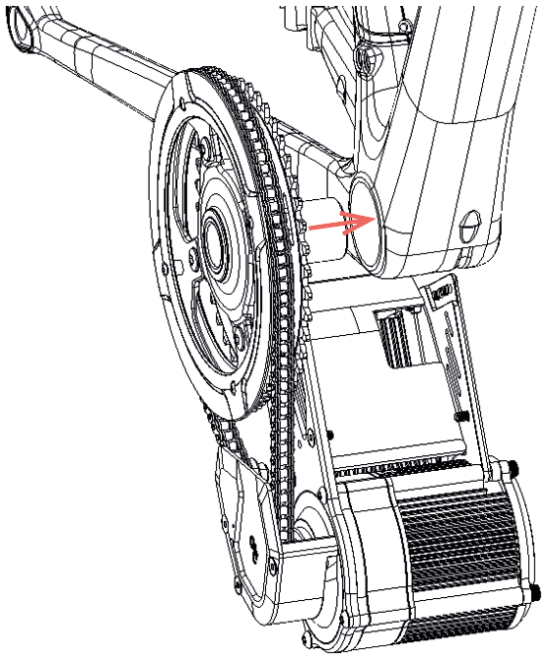
Installation of BB92 version

1.
    a. Install the BB92 to BSA adapters provided to the frame's bottom bracket shell. Use a press fit installation tool to insert the adapters, ensure to add grease on the adapters before pressing in.
    b. Add BB92 adapter plate and 2 x M5*6 screws into the left (non-drive) of the plate of the motor system and tighten to torque (see page 69).



2. Line up the motor body with your frame at the bottom bracket and insert the right (drive) side of the motor into the frame's bottom bracket shell.



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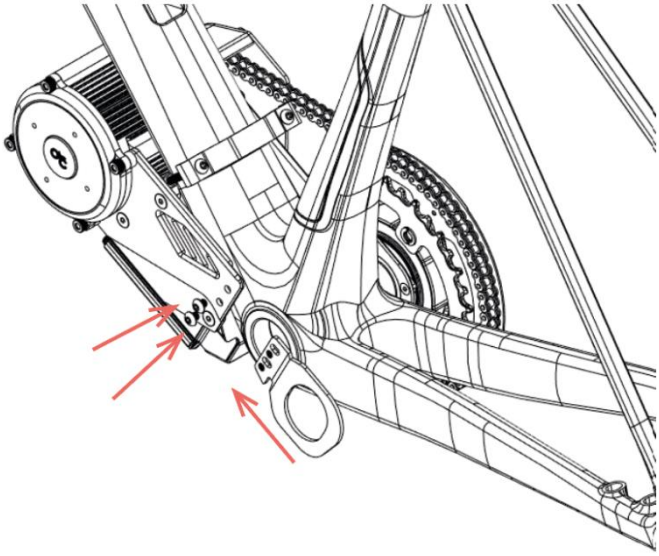
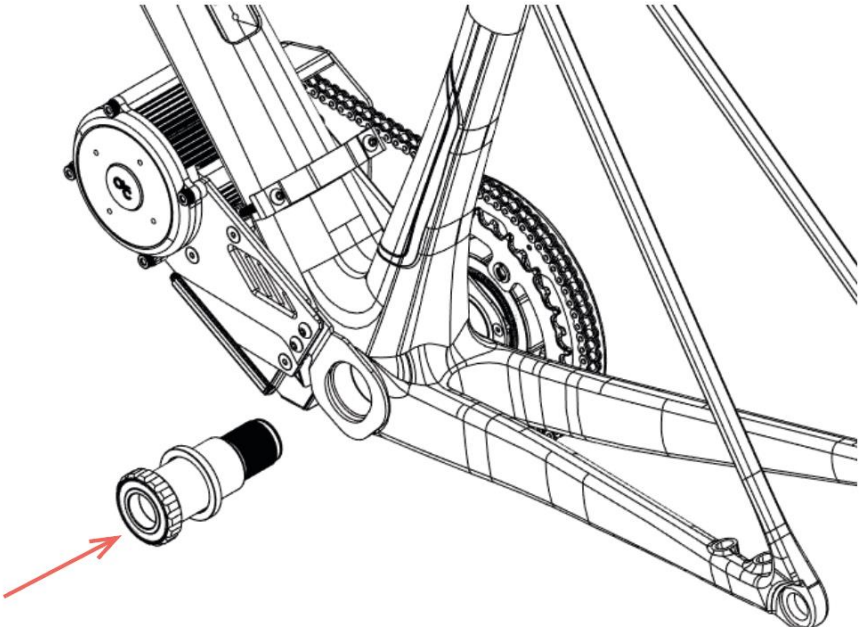
3. Add 2 X M5*6 screws into the left (non-drive) side adapter plate and the mounting bracket.



4.

a. Add the 5mm bottom bracket spacer provided outside the adapter bracket plate on the left (non-drive) side of the frame.
b. Thread the left (non-drive) side bottom bracket cup into the frame's bottom bracket shell through the spacer and the adapter bracket plate. Rotate clockwise.



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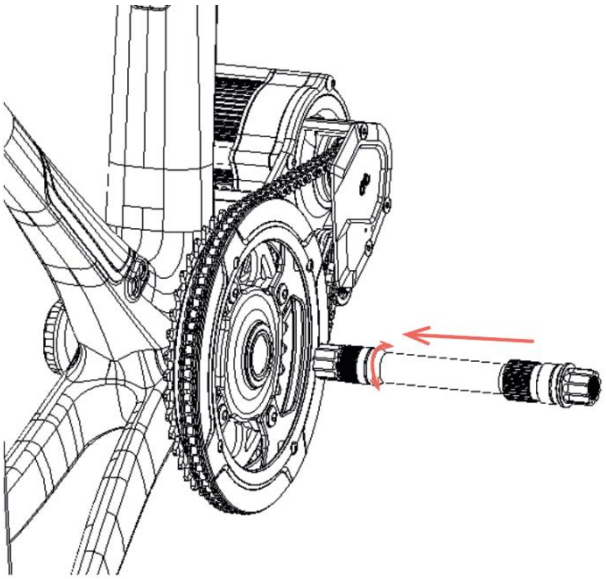
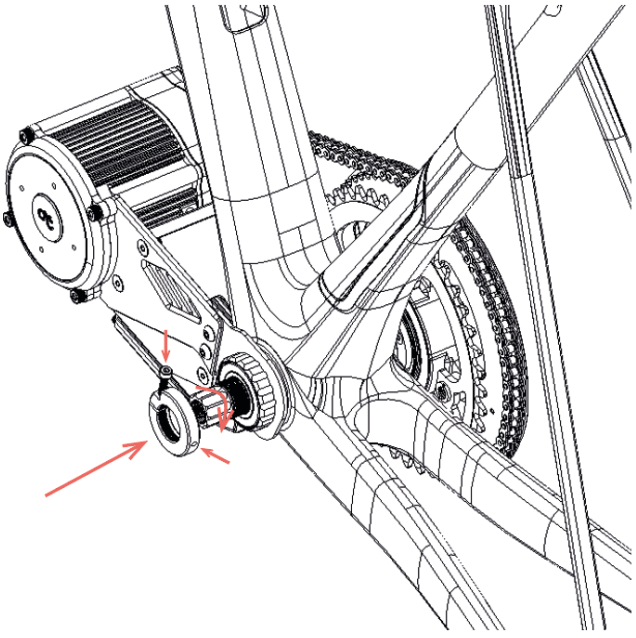
5. Insert the spindle from the right (drive). Note that you will need to line up the splines with the chainring assembly. If your spindle does not go through or comes to a hard stop before being fully inserted, rotate the spindle a bit and try again. Once the spindle is lined up, a soft tip hammer may also be used to get the spindle all the way through.



6.
   a. On the left (non-drive) side, thread in the lock ring.
   b. Use a 3mm hex key to lightly thread in the lock ring further. There is a small insertion made on the side of the lock ring for the hex key.
   c. Lightly tighten the lock ring. The spindle should not be tension too much by the lock ring and should still be able to rotate freely by hand.
   d. Install the motor hanger (see page 29) and place the rubber padding provided in between the motor and the frame.



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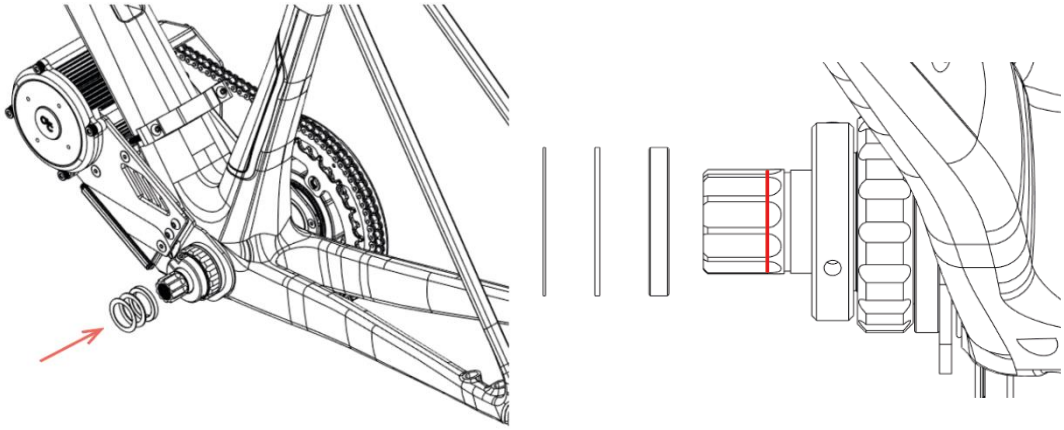
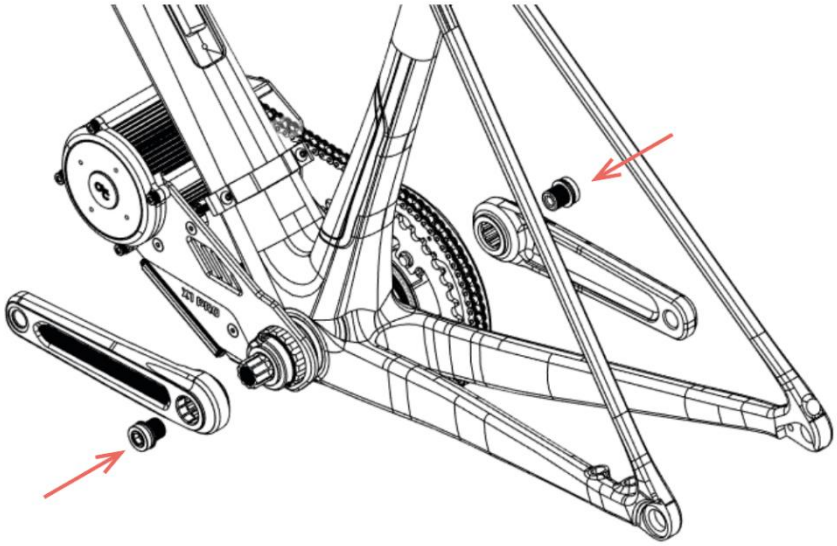
7.
    a. Insert spindle spacers on the spindle on the right (drive) side.
    b. Insert spindle over the spindle on the left (non-drive) side. Place spacers accordingly up to the indicated line.
8.
    a. Install the left (non-drive) and right (drive) side crank arm according to the **L** and **R** indication on your crank arms.
    b. Use the M15 ISIS crank arm screws to tighten and secure the crank arms. Tighten both crank arms until it touches the spindle step on the drive side or the opposed spacers on the non-drive side. Tighten to torque specification. (25 – 30 N.m.)



9. Place your bicycle chain over the inner chain ring. Note that you will need to undo the quick link to split your chain.



10. Connect the peripherals and your battery.
11. Test run and have fun! Use responsibly.

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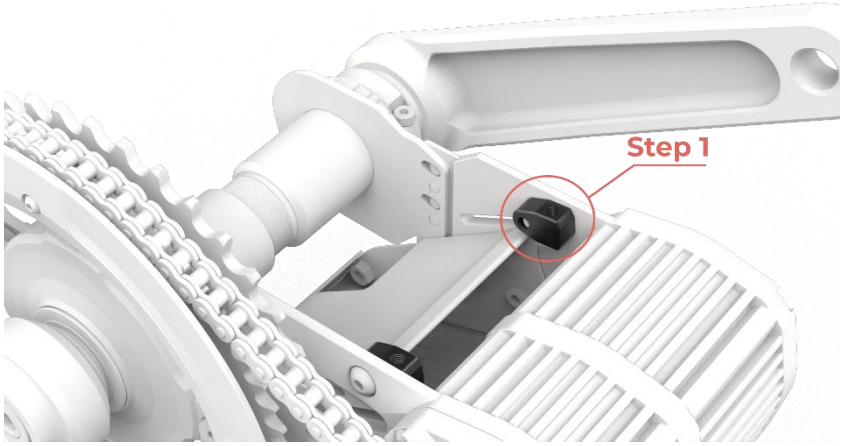
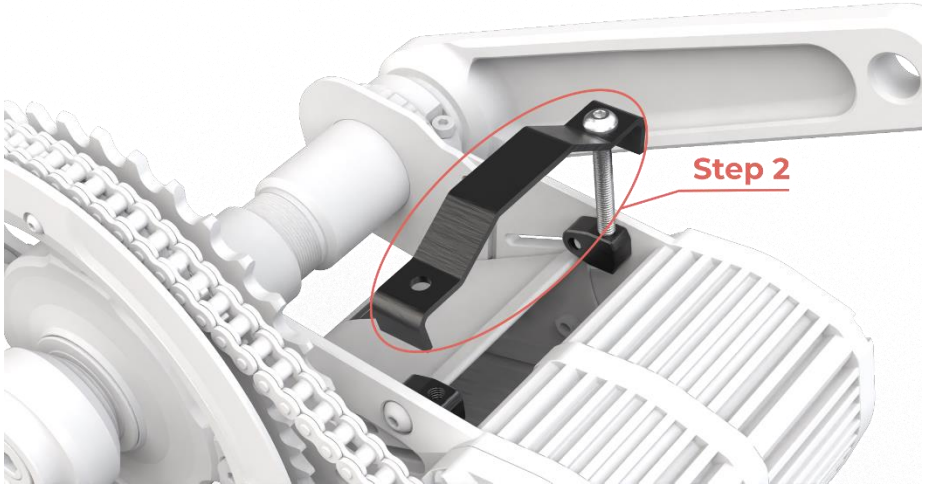
Mounting the Hanger

1. Place one of the aluminium joints on the inside of the bracket & screw in the bolt to attach it to the motor's mounting plate.



2. Position the hanger over the bike's frame & screw in the hanger to the aluminium joint loosely.



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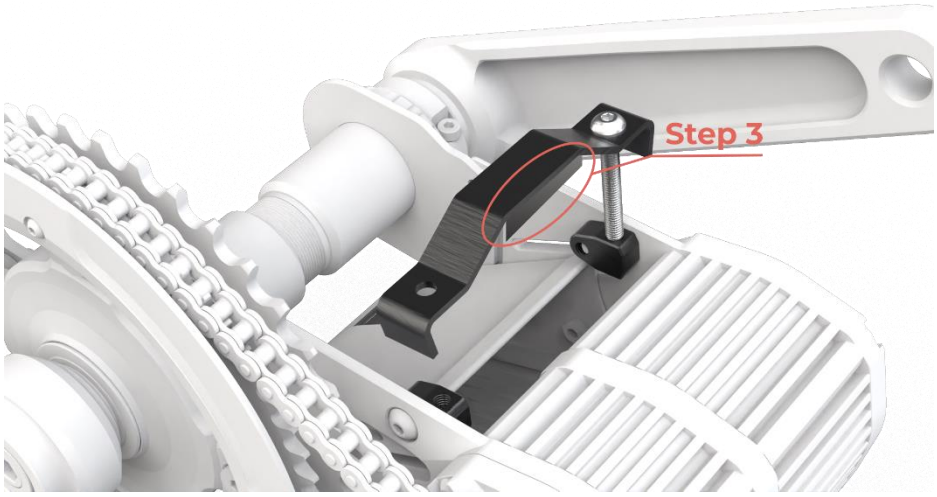
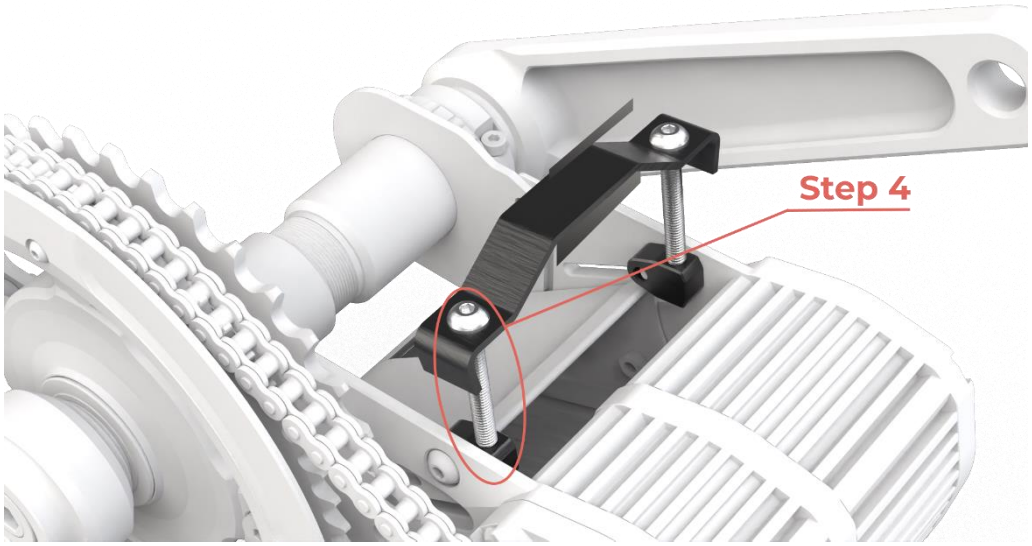
3. Insert the rubber piece provided between the frame & the bracket.



4. Place the second aluminium joint on the other side of the mounting bracket & connect the hanger fully. Tighten the hanger to ensure that the motor is secured.



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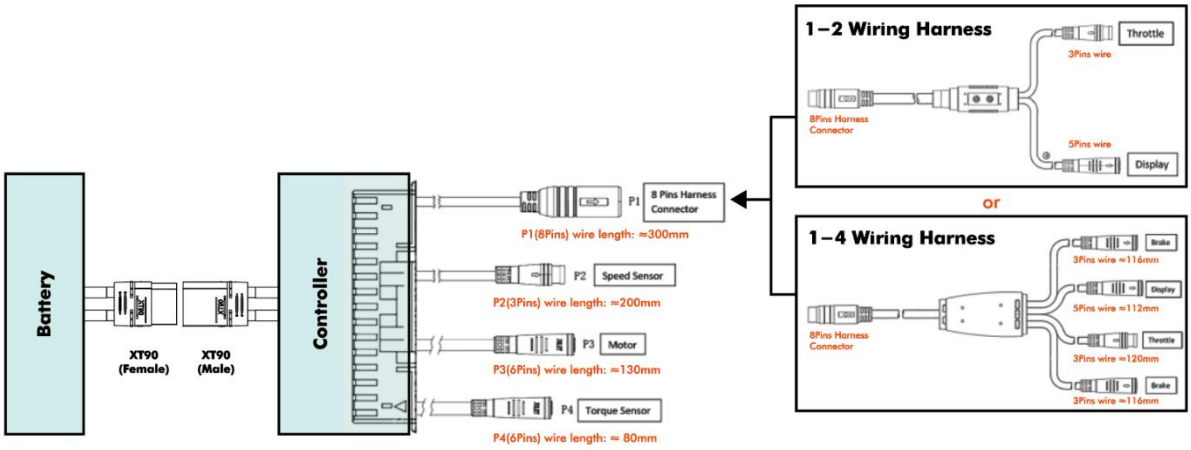
Wiring & Connection

Connect your controller to the following connectors as per below:

1. Connect the peripheral connector (P1) to the 1-2 or 1-4 wiring harness
2. Connect P2 to the speed sensor
3. P3 & P4 will already be connected when the motor is received

For brake sensors:

Please note if you purchased brake sensors separately, you will need to enable them on the CYC Ride Control app.



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MOBILE APP & DISPLAY

Ride Control App User Guide

Monitor & customize your e-bike riding experience for all CYCMOTOR mid-drive systems. Use it as a secondary dashboard, settings set-up, or both. Unleash all the possibilities of e-bike customization at your fingertips.

The mobile app is not the only way to customize your system. The controller is also programmable via the included display-integrated for your convenience.

This platform is your go-to station for your CYCMOTOR kit and X-Series controllers.

FEATURES:

- Bluetooth connectivity
- Complete with torque sensor configuration
- Compatible with CYC X-Series Controllers
- Real-time dashboard for all your motor & riding information
- Fully customizable parameters for pedal assist, throttle & gear preferences

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Dashboard

Brake sensor indicator
COMING SOON

Warning icon to check
error codes & clear faults

Bluetooth icon to connect
to your device

Instantly change between
STREET & **RACE** mode

Change between your
DASHBOARD & **SETTINGS**
page

ALL PARAMETERS SHOW

REAL-TIME INFORMATION

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Connecting a Device

Seria

Step #1:

Open the app and tap the Search button at the bottom of the screen. Kindly ensure your phone's Bluetooth is enabled. (Please keep close to the motor while connecting)

Step #2:

Available devices will then be listed, select your kit and it will begin connecting to the controller. (Please note signal strength)

Step #3:

Once connected, the CONNECT icon will change stating you are connected & can select again to disconnect.

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Main Settings

The settings page allows you to navigate through different parameter categories. There are six different categories with each providing a set of adjustable parameters or readings from your ebike system.

IMPORTANT

Save all new changes in parameters to flash or risk losing progress after a restart. Note to save after every change in value.

To save to flash, tap the ‘Save’ button in the upper righthand corner. “Save successful’ message will appear upon completion.

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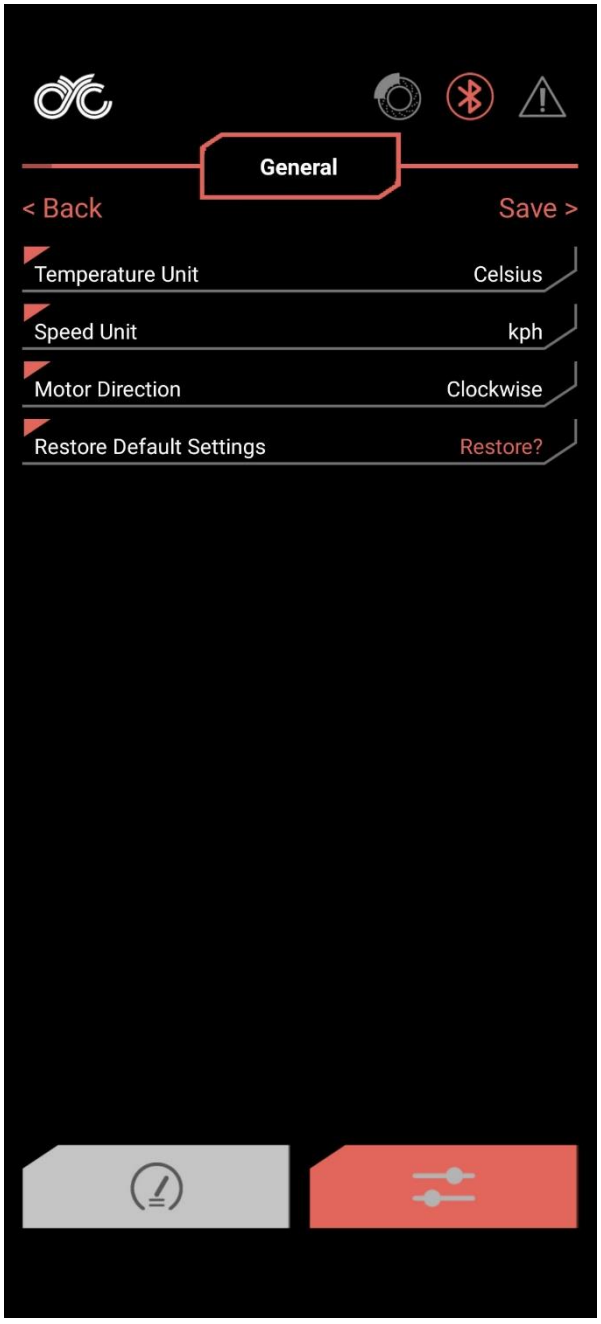
General



Temperature Unit

Set your units to display in degree Celsius (°C) or Fahrenheit (°F)

Speed Unit

Set the speed unit to miles or kilometres

Motor Direction

This setting is for users who'd want to switch the direction to where the motor is facing. Please note that this is reserved for specific uses only.

WARNING: Do not change this setting is using the motor in its default position. Contact CYC for assistance.

Restore Default Settings

Restore to factory/default settings.

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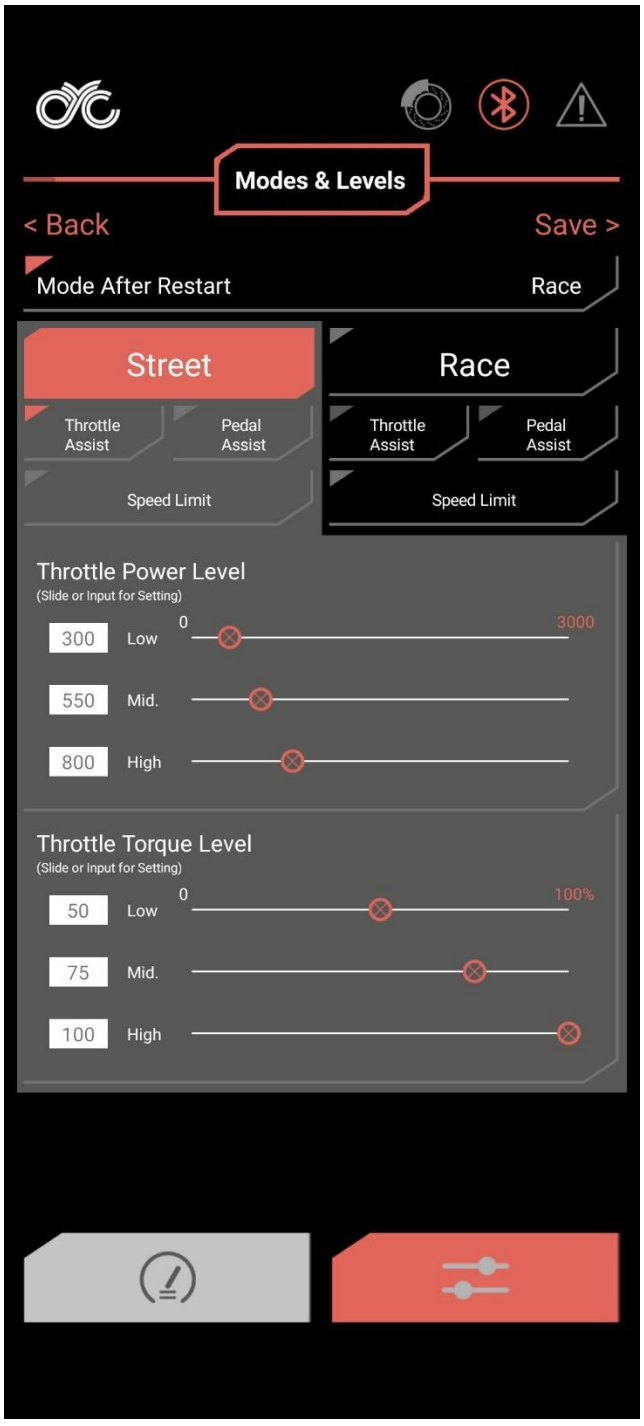
Modes & Levels



Race & Street Mode

You can set the throttle & PAS output independently for both modes.

Race Mode Throttle & PAS

Race Mode is your “boost” or “full power” mode and has parameters set for reaching closer to the system’s full capabilities. You can adjust these to your own preference within the capabilities of your controller. The default setting in Race Mode is 3000W & 100 km/hr.

Street Mode Throttle & PAS

Street Mode is intended to be set to your region’s legal limits. You can adjust these to your own preference or to your region’s legal limits. You can adjust these to your own preference or to your region’s legal limits. The default setting in Street Mode is 750W & 25Km/hr.

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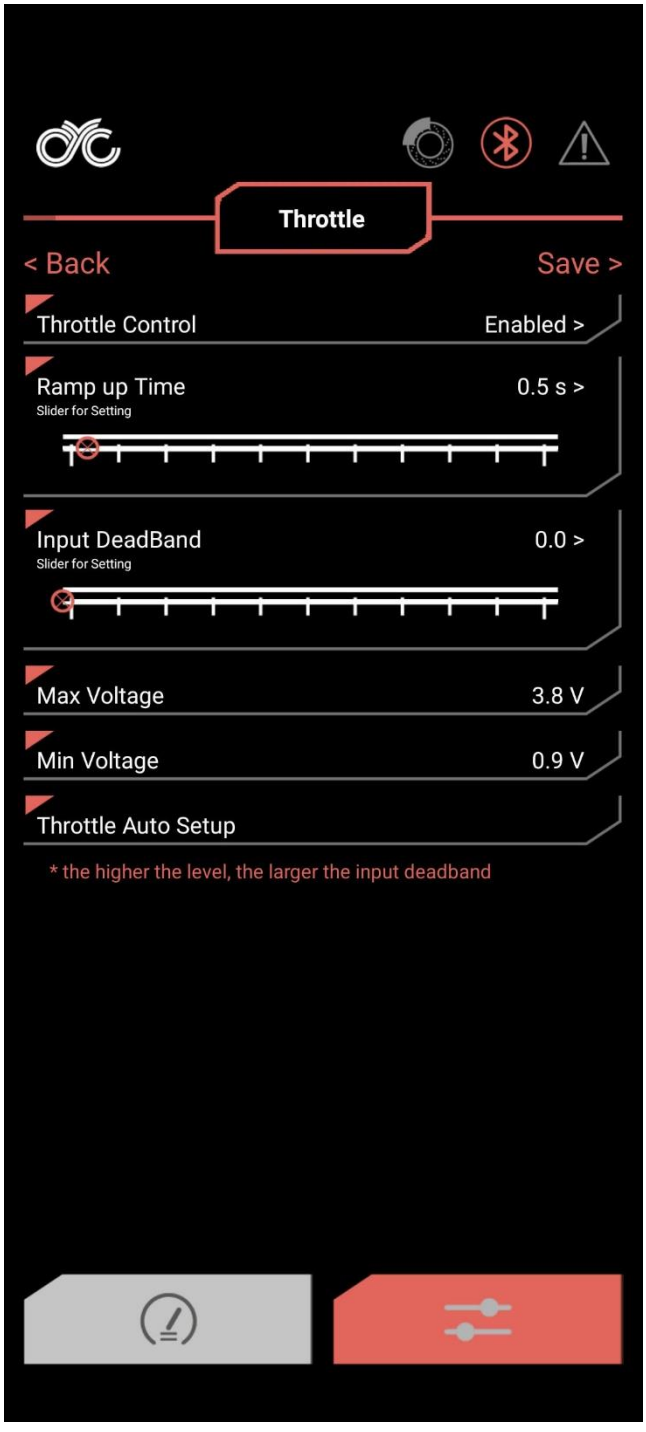
Throttle



Ramp Up Time

This is the time it takes for the motor to achieve the required input. For example, if you open the throttle fully, it will take 250ms (by default) before the motor gives you full power. It will gradually ramp up to full power within the set time. We recommend not setting this below 150ms.

Input DeadBand

This value pertains to opening the throttle when it's completely closed. This is the amount of throttle can be moved from the zero position without generating a response from the motor. If this value is set lower, your throttle will engage quicker and vice versa.

Max Voltage

This value should be the same as the Throttle Voltage Reading when the throttle is closed and sets the output when it is not active.

Min Voltage

This is the output of the throttle when opened fully and is pre-set when purchased. This does not need any change with CYC supplied throttles.

Throttle Auto Setup

For using your own throttle, this will automatically setup the min and max voltage accordingly. Follow the steps prompted on the screen to set up.

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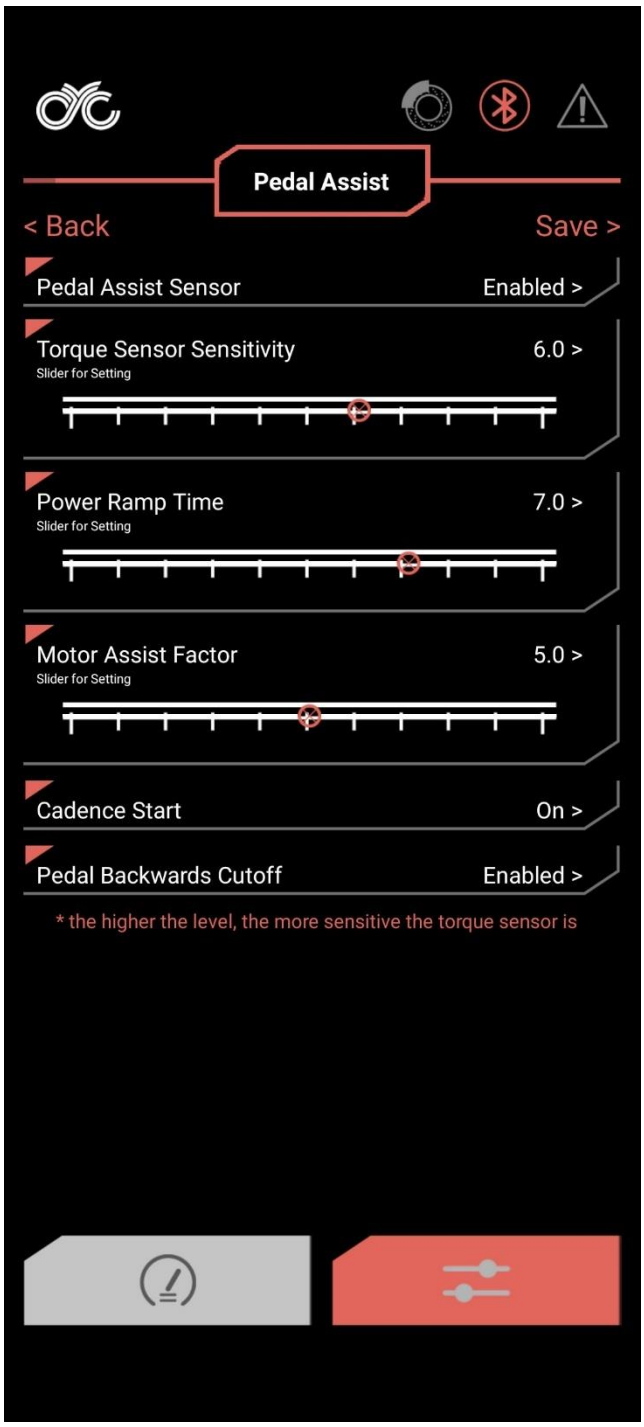
Pedal Assist



Pedal Assist Sensor

Enable or disable pedal assist.

Torque Sensor Sensitivity

This value pertains to activating pedal assist when it's completely off. This is the amount of pedal force required to activate the pedal assist. If this value is set higher, your pedal assist will engage with less force and vice versa.

Power Ramp Time

The amount of time it takes to reach the desired input. This is the responsiveness of the motor.

Motor Assist Factor

This value pertains to how hard you need to pedal to get full power.

Cadence Start

This feature allows for a cadence-free pull away. i.e., only torque (40N.m.) is required to activate pedal assist.

Pedal Backwards Cutoff

This feature allows you to cut motor power when you pedal backwards.

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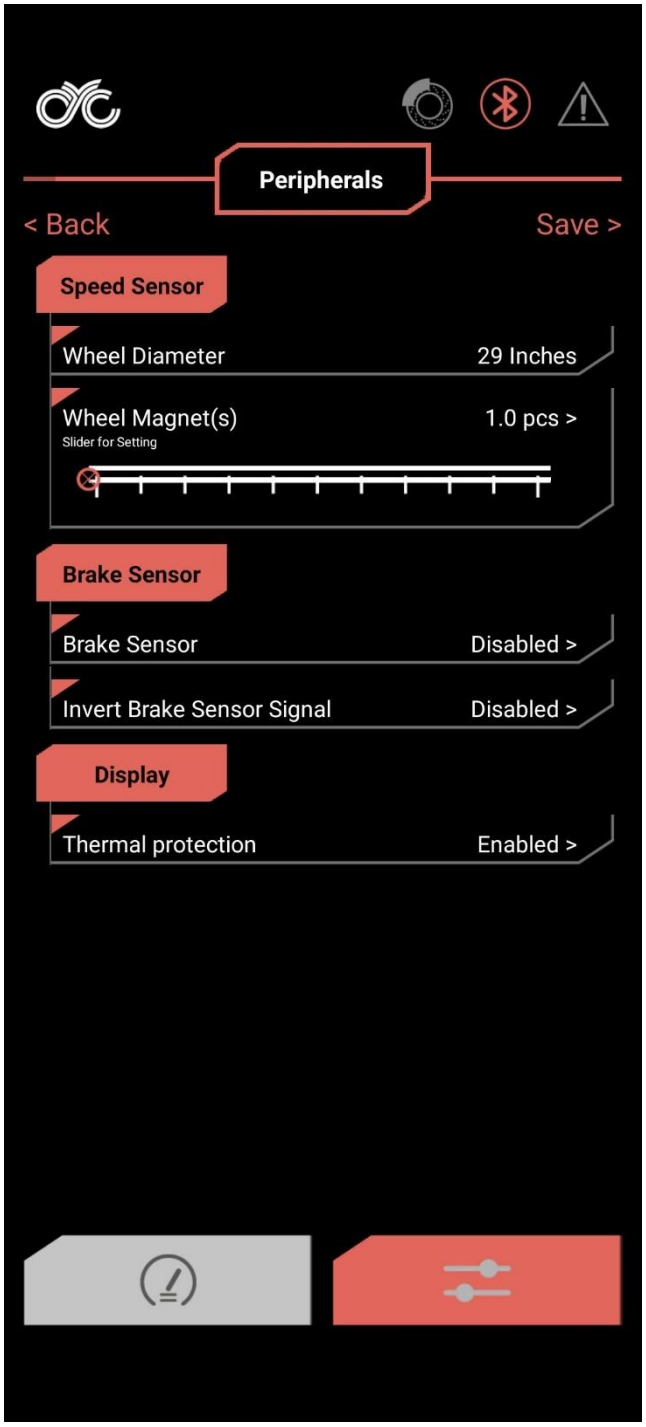
Peripherals Setup



Wheel Diameter

The wheel diameter can be measured or be calculated. We advise that this number must be calibrated so that vehicle speed within the app matches display speed.

Wheel Magnet

This is the number of magnets in the wheel that is communicating with the speed sensor. For more accurate vehicle speed limiting and measurement, we advise to add more magnets to the wheel.

Brake Sensor

Enable/Disable brake sensors.

Invert Brake Sensor Signal

If you are using brake sensors from a different supplier, you can use this feature to set up your brake sensors as needed.

WARNING: Please contact your authorized dealer or CYC support if you're setting up third-party peripherals.

Thermal Protection

This is an advanced feature and requires a password from CYC to change. This allows you to disable your motor temperature sensor. Contact us for more details and password for this feature.

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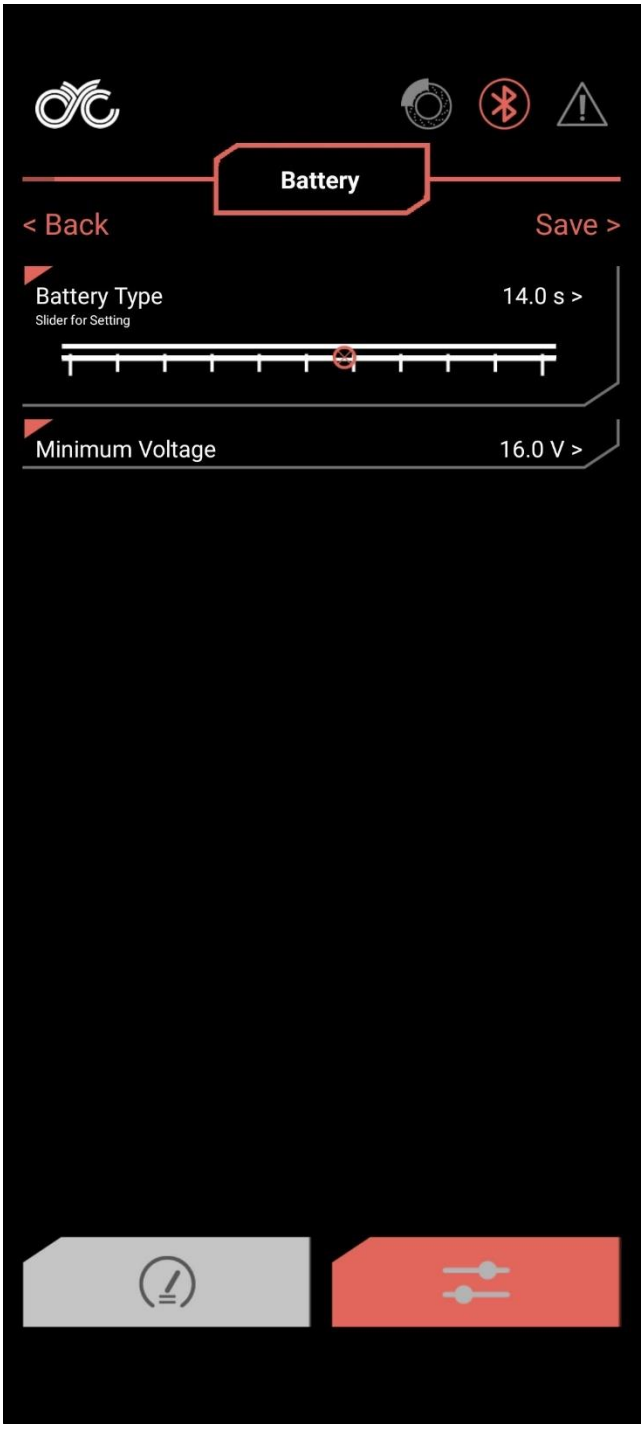
Battery



Battery Type / Series of Cells

10s = 36V, 14s=52V, 20s=72V

Minimum Voltage

The value the controller will fault when connecting too low a voltage to the system. This setting can be used to protect your battery if too much voltage sag is detected.

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Please note that the Maximum Power Level MUST be changed in the CYC Ride Control App to match your battery's specifications. Follow the guidelines below:

Battery Voltage	BMS	Motor Power Limit
72V	50A	3600W
72V	40A	2800W
72V	30A	2000W
60V	50A	3000W
60V	40A	2400W
60V	30A	1800W
52V	50A	2500W
52V	40A	2000W
52V	30A	1500W
48V	50A	2400W
48V	40A	1900W
48V	30A	1400W
36V	40A	1400W
36V	30A	1000W
36V	20A	700W

*Failure to set power settings correctly through the CYC Ride Control App may cause damage to your battery and/or motor.

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SW102 Display User Guide

Product Details

Product Name

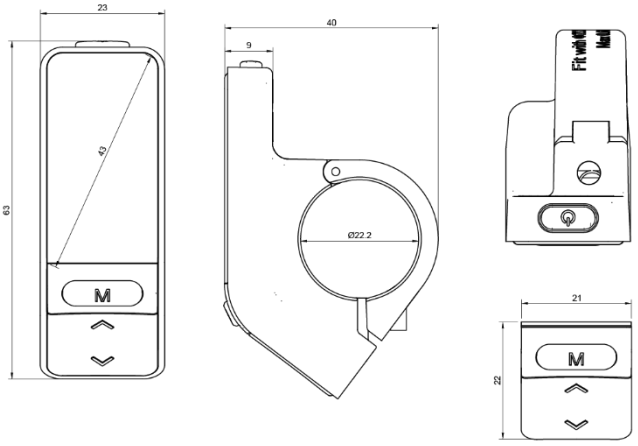
Intelligent OLED display, model: SW102

Firmware: CYCMOTOR LTD specific firmware

Features

- Minimalist design and process
- High brightness, high contrast 1.3-inch monochromatic OLED screen
- Excellent outdoor design with IP65 waterproof rating

Dimensions & Materials



Materials

Product shell – ABS + PC plastic

Transparent window – 2.5D Tempered glass

Dimensions

L 23mm x W 40mm x H 63mm

Electrical Specifications

- Power supply: DC 36V / 48V / 52V
- Rated current: 12mA
- Shutdown leakage current: <1uA
- Screen specification: 1/3” OLED (64*128 dots)
- Communication method: UART (default)
- Operating temperature: -20°C ~ 80°C
- Storage temperature: -30°C ~ 80°C
- Waterproof level: IP65

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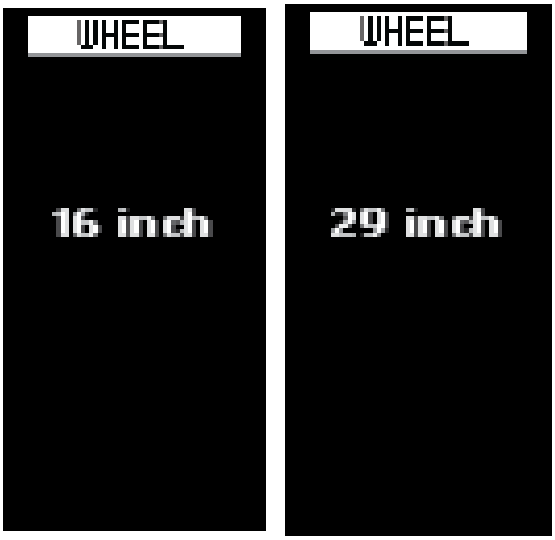
Quick Start Guide

After unboxing and installing your CYC motor system, there are two main things you need to set up.

1. Change your Battery No. setting according to your rated voltage.
    a. Within 15 seconds of turning on your display, long press the MENU button to enter

the settings functions. Press UP/DOWN to navigate the settings page & MENU to select.



2. Change your Wheel setting according to your bike's wheel size.

3. Now you can set things up like your temperature and speed unit as well as your brightness level.

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Functionalities

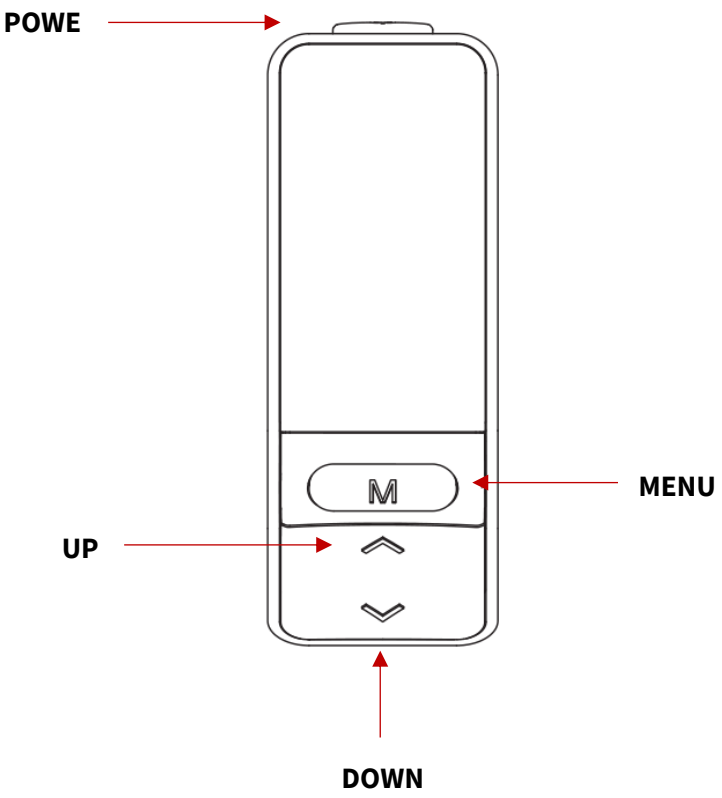
Power On/Off

Press and hold the POWER button for 2 seconds to turn the display on/off. The display will automatically shut down when there is no operation for a period of time.

Navigation

1. POWER
2. MENU
3. UP
4. DOWN

The MENU button is used to go into your settings page & clear data page. It is also used to enter and select a setting or function & finally, it's also used to switch between the various main dashboard information.



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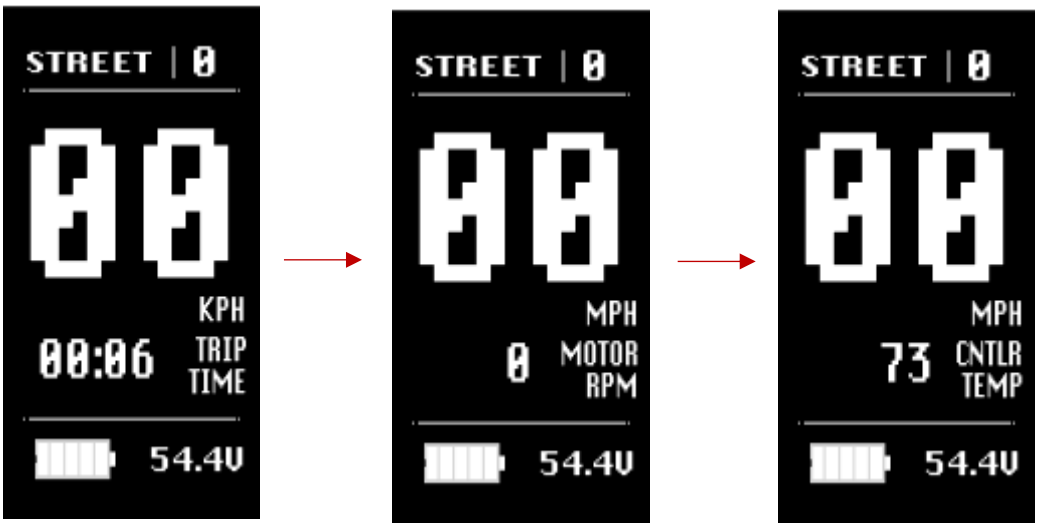
Switch Dashboard

Switch the main dashboard to display different information by pressing the MENU button.



Assist Level Operating

Press the UP/DOWN button to change the assist level between level 1, 2, and 3. Please note that “OFF” means no motor assistance will be given.

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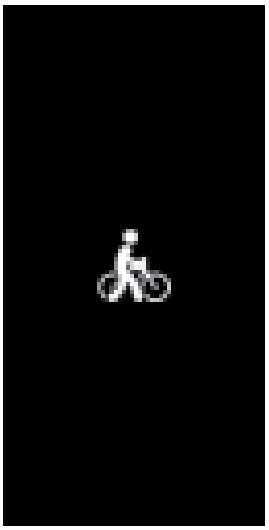
Walk Assist

Long press the DOWN button to activate walk assist. Note that it takes 3 seconds to activate & will deactivate immediately when the button is released.

Walk assist can only be activated if you are in assist level 1, 2, or 3.



Settings

Long press the MENU button within 15 seconds of switching on the display to enter the “Settings” page. Note that once the system has been activated for longer than 15 seconds, you will need to restart the motor system to enter the settings menu.

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Clean Trip Data

Wait 15 seconds after starting up the motor system to be able to enter the “Clean Data” menu. Long press the MENU button to clear previous trip data. Please note that the trip data does not automatically clear once you restart the motor system. This is a manual process.

Error Codes

In certain circumstances, an error code may appear on your display. Contact us for assistance.

Error Code on SW102 Display	Error Code on App
1	Controller Over Voltage
2	Controller Under Voltage
4	Controller Internal Error 1
5	Controller Over Temperature
6	Motor Over Temperature
9	Controller Internal Error 10
10	Controller Internal Error 2
14	Controller Internal Error 3
15	Controller Internal Error 4
16	Controller Internal Error 5
17	Controller Internal Error 6
18	Controller Internal Error 7
23	Controller Internal Error 8
24	Controller Internal Error 9
26	Hall Sensor Error
28	Throttle Error
29	Speed Sensor Error

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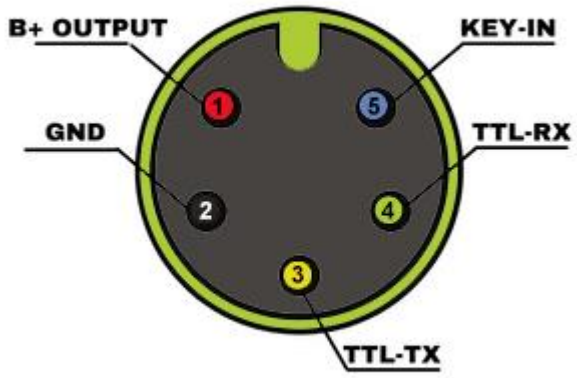
Installation

Open the display lock clip, set the display in the left handlebar (standard handlebar size Φ22.2). Adjust it in place and tighten the screw accordingly.

Note: Damage caused by excessive torque is not covered by warranty.

Pin Layout



Male 5-Pin Connector

1. Red Wire: Anode (36V to 72V)
2. Black Wire: GND
3. Yellow Wire: TxD (display -> controller)
4. Green Wire: RxD (controller -> display)
5. Blue wire: Power cord to the controller

Certification

CE / IP65 (waterproof) / ROHS

Be sure to contact us if further assistance is needed. Thank you!

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DS103 Display User Guide

Product Details

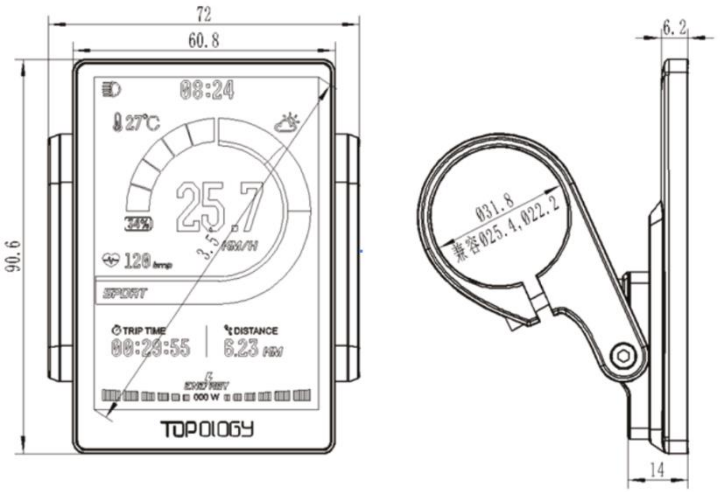
Intelligent LCD display, model: DS103

Firmware: CYCMOTOR LTD specific firmware

Features

- Simple and lightweight, separate installation bracket design
- High brightness, high contrast 3.5 coloured TFT screen
- Clock function (clock is on when the display shutdown)
- Excellent outdoor design with IP65 level waterproof
- Micro USB serial communication port, convenient maintenance services

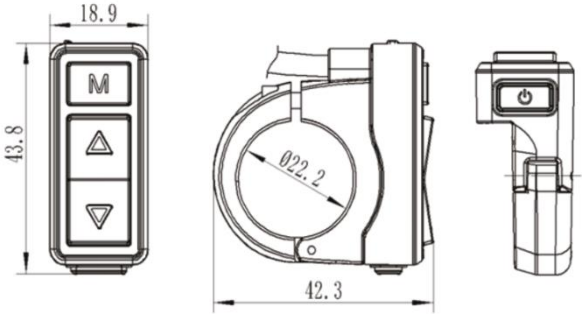
Dimensions & Materials



Materials

Product shell – ABS + PC plastic

Transparent window – Tempered glass



Dimensions

L 72mm x W 14mm x H 90.6mm

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Electrical Specifications

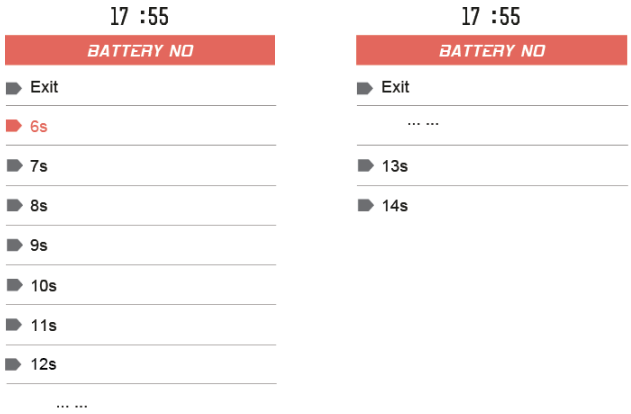
- Power supply: DC 24V/ 36V/ 48V/ 52V
- Rated current: 30ma/36V
- Shutdown leakage current: <1uA
- Screen specification: 3.5” coloured TFT (480*320 pixels)
- Communication method: UART (default)
- Operating temperature: -20°C ~ 60°C
- Storage temperature: -30°C~80°C
- Waterproof level: IP65

Quick Start Guide

After unboxing and installing your CYC motor system, there are two main things you need to set up.

1. Change your Battery No. settings according to your rated voltage.

Within 15 seconds of turning on your display, long press the MENU button to enter the settings functions. Press UP/DOWN to navigate the settings page & MENU to select.



6s = 22.2V	9s = 33.3V	12s = 44.4 V
7s = 25.9V	10s = 36V	13s = 48V
8s = 29.6V	11s = 40.7V	14s = 52V

Please note that 6s is not compatible with the CYC systems. This will be removed in future batches. Our apologies for the confusion.

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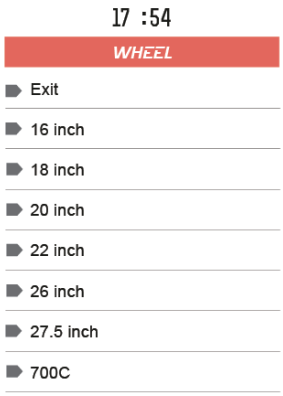
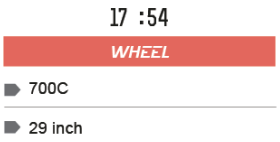
2. Change your Wheel settings according to your bike's wheel size.





3. You can now set up parameters like temperature and the speed unit as well as the brightness level!

Functionalities

Press and hold the POWER button for 3 seconds to turn the display on/ off.

Navigation

The MENU button is used to go into your main settings page & your clear data page. It is also used to enter and select a setting or function.

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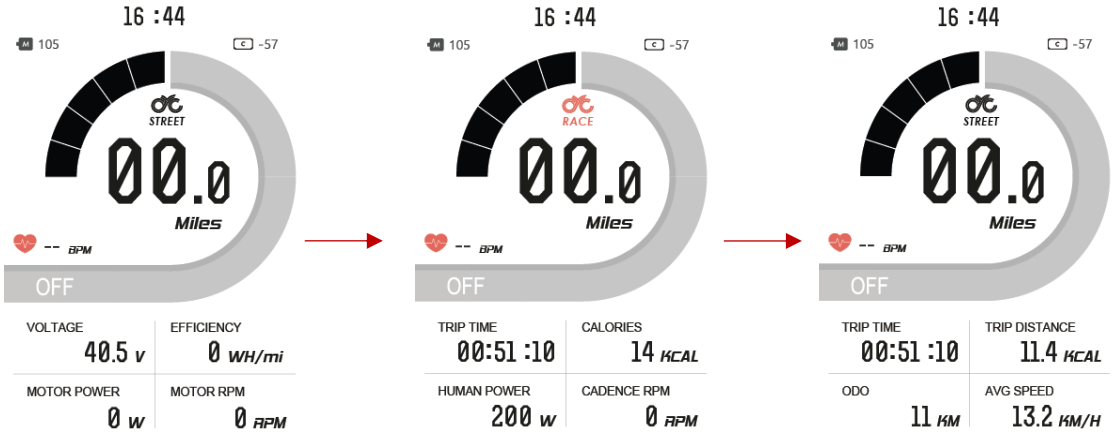
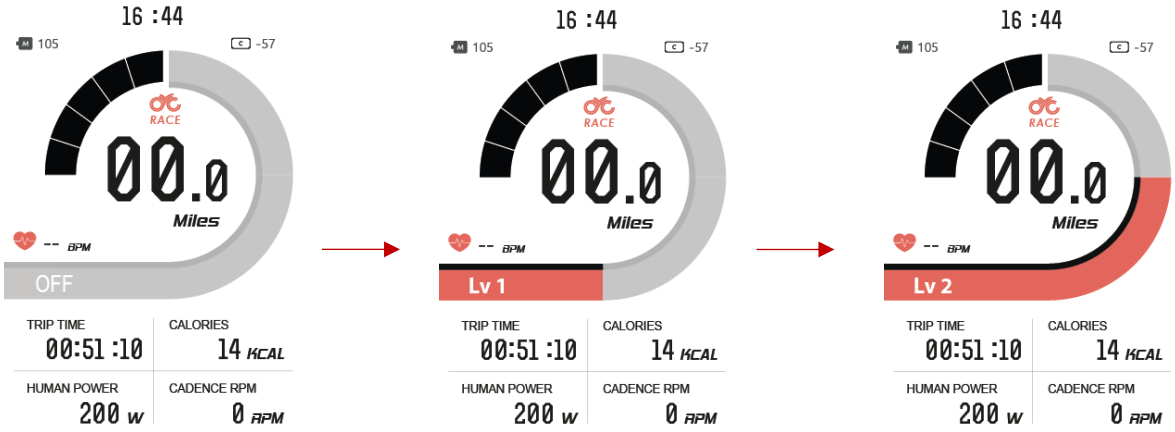
Switch Dashboard

Switch the main dashboard to display different information by pressing the MODE button.



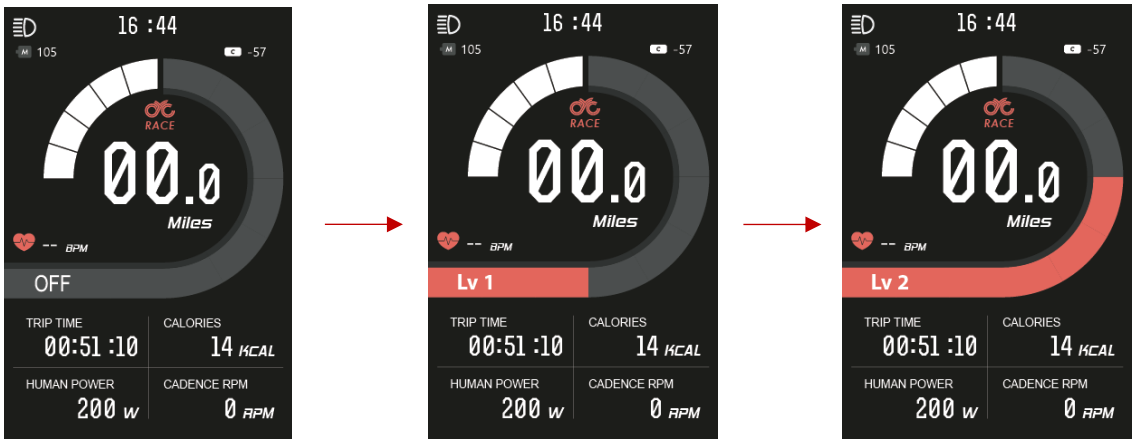
Assist Level Operating

Press the UP/DOWN button to change the assist level between level 1, 2, and 3. Note that “OFF” means no motor assistance will be given.



Dark & Light Themed Dashboard

Long press the UP button to switch between the light and dark themed dashboards.



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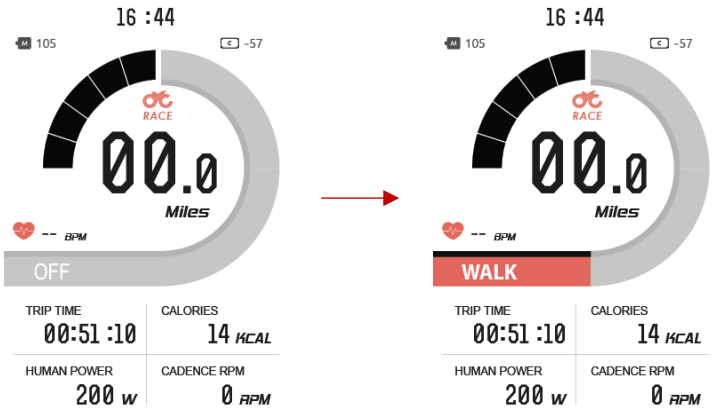
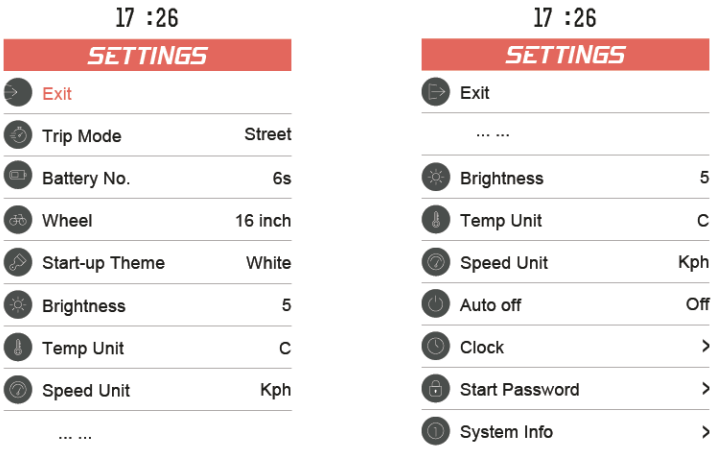
Walk Assist

Hold in the DOWN button to activate walk assist. Please note it takes 3 seconds to activate & will deactivate immediately when the button is released.



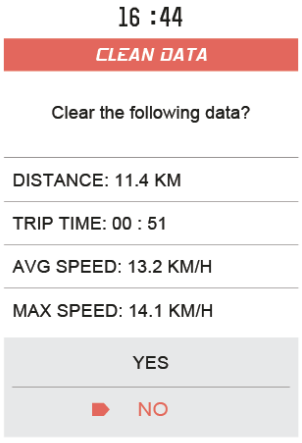
Settings

Long press the MODE button within 15 seconds of switching on the display to enter the “Settings” page. Please note that once the system has been activated for longer than 15 seconds, the motor system will require a restart to enter the settings menu.



Clean Trip Data

Wait 15 seconds after starting up the motor system to enter the “Clean Data” menu. Long press the MODE button to clear previous trip data. Please note that trip data does not automatically clear once the motor system is restarted. It is a manual process.



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Error Codes

In certain circumstances, an error code may appear on your display. Contact us for assistance.

Error Code on App & DS103 Display
Controller Over Voltage
Controller Under Voltage
Controller Over Temperature
Hall Sensor Error
Throttle Error
Speed Sensor Error
Controller Internal Error 1
Controller Internal Error 2
Controller Internal Error 3
Controller Internal Error 4
Controller Internal Error 5
Controller Internal Error 6
Controller Internal Error 7
Controller Internal Error 8
Controller Internal Error 9
Controller Internal Error 10

Installation

1. Determine if you need to select the corresponding mounting clamp and rubber clip ring according to the diameter of your handlebar (Applicable handlebar specifications: Φ22.2; Φ25.4; Φ31.8).
2. Open the display lock clamp and insert the rubber clip (if applicable) into the correct position of the lock clamp.
3. Set the rubber ring in the bracket (if applicable) then assemble on the middle of the handlebar. You can adjust the angle of the display to make the display screen more visible when riding. After fixing the angle, tighten the screws. The tightening torque is 1N.m.
4. Open lock ring of the switch and set in the appropriate position on the left side of the handlebar. Adjust the angle and position of the switch as needed in order to ensure the switch can be operated easily.
5. Fix and tighten the handlebar fixing screw with the M3 Hex wrench (locking torque is 0.8N.m.)

Note: Damage caused by excessive torque is not covered by warranty.

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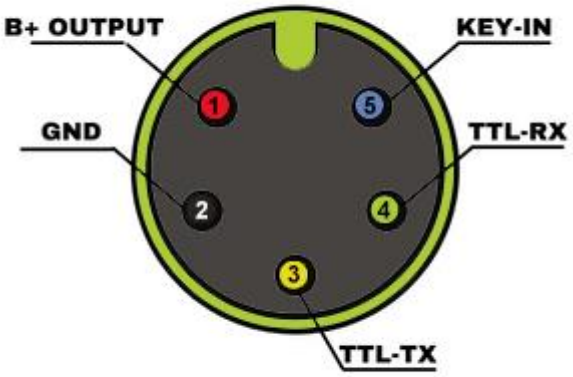
Compatibility

The clamps are suitable for 3x different handlebar sizes: 31.8mm, 25.4mm & 22.2mm.

Pin Layout



Male 5-Pin Connector

1. Red Wire: Anode (36V to 72V)
2. Black Wire: GND
3. Yellow Wire: TxD (display -> controller)
4. Green Wire: RxD (controller -> display)
5. Blue wire: Power cord to the controller

Certification

CE / IP65 (waterproof) / ROHS

Be sure to contact us if further assistance is needed. Thank you!

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750c Display User Guide

Product Details

High- contrast 3.2-inch IPS colourful matrix screen, model: 750c

Firmware: CYCMOTOR LTD specific firmware

Features

- Suitable for low temperature: Max - 20°C
- Ergonomic external button design, easy to operate
- Speed display: AVG SPEED, MAX SPEED, SPEED (Real-time)
- Kilometre/Mile can be set according to user's preference
- Smart battery indicator
- 9 Assist levels: 3-levels / 4-levels / 9-levels options
- Mileage indicator: Odometer / Trip distance / Clock / Riding Time
- Power indicator: Real-time power indication; digital or analog
- Error code indicator

Dimensions & Materials

Materials

Product shell – ABS plastic

Transparent window – High strength Acrylic

Dimensions

L 110mm x W 68.2mm x H 68mm

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Electrical Specifications

- 3.2-inch IPS screen
- 36V / 48V / 52V / 72V battery supply
- Rated operating current: 40mA
- Off leakage current: <1uA
- Max output current to controller: 100mA
- Operating temperature: -20°C ~ 70°C
- Storage temperature: -30°C ~ 80°C

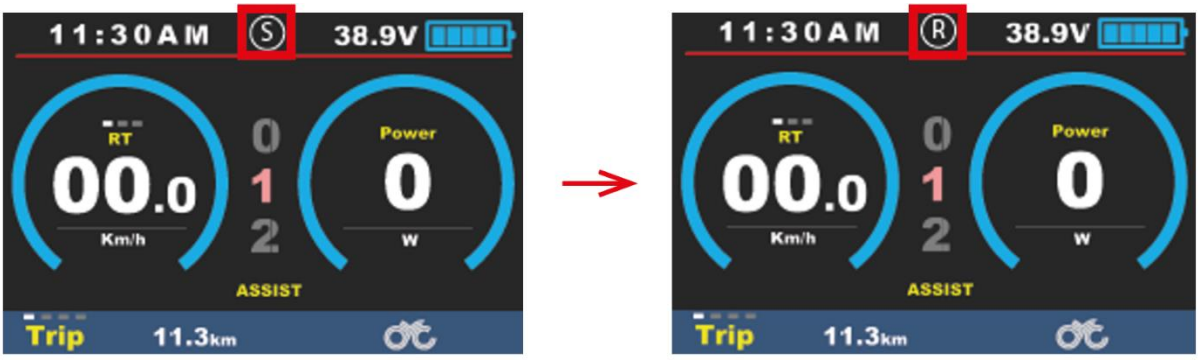
Main Functionalities

Power On/Off

Press and hold the POWER button for 1 second to turn the display on/off. The display will automatically shut down when there is no operation after a period of time.

Mode Switch

Double press the **POWER** button to switch between RACE mode & STREET mode. Note that this will not change the mode in real-time but rather set the start-up mode (Street mode recommended). Change the mode in real-time through the mobile app.



Street Mode **Race Mode**

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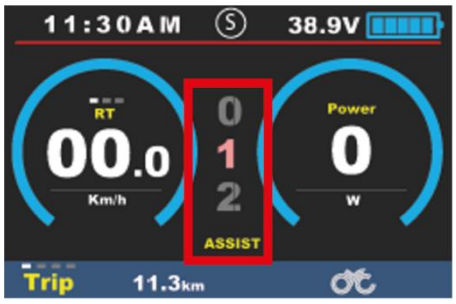
Assist Level Operating

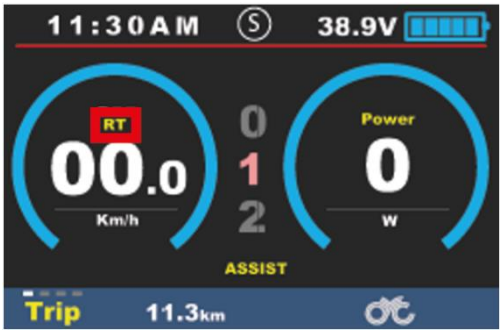
Short press the UP/DOWN button to change assist levels. The top assist level is 9 while 0 is neutral. The amount of assist levels can be adjusted according to the user's preference.



Speed Display Switch

Short press the MENU button to change speed mode: Speed -> AVG Speed -> MAX Speed.

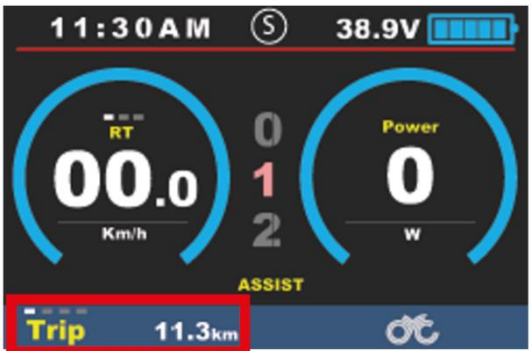
- **RT** = Real time speed
- **AVG** = Average speed
- **MAX** = Maximum speed



*If there's no operation for 5 seconds, the display will return to *real-time speed* automatically.

Mileage Display Switch

Short press the POWER button to change mileage mode: Trip -> ODO -> Time -> Range



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Parameter Settings

Button Navigation

Double press the MENU button to access the settings menu. Note that the press interval must be less than 0.3 seconds. Press the POWER button to change between the Display Settings & Basic Settings.

Press the UP/DOWN buttons to change between the parameters, MENU button to select & UP/DOWN to change the selected parameter.

Press the MENU button to deselect the parameters and to set changes made.

- The display will automatically quit the settings menu when there's no operation for 30 seconds
- For safety reasons, the display cannot get into the settings menu when riding
- The display will quit the settings menu when the user starts riding

Display Settings

System

Press the UP/DOWN button to change between Metric & Imperial.

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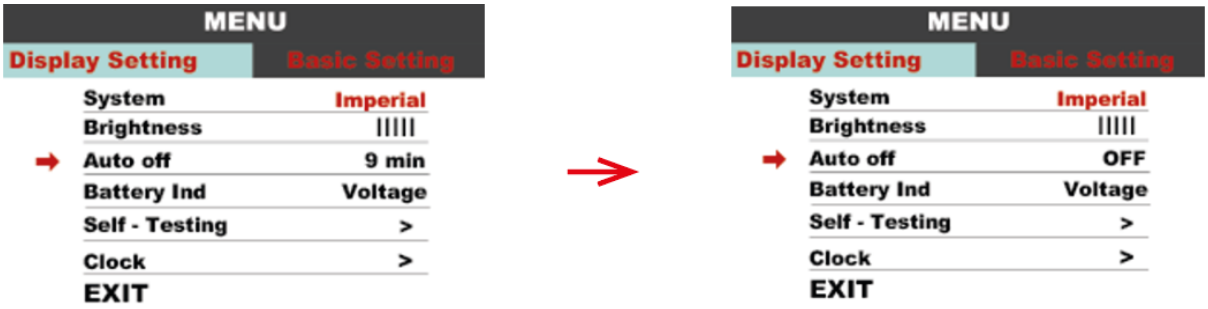
Brightness

Press the UP/DOWN button to change the brightness of the display's backlight. "I" is the darkest "IIIII" is the brightest.

Auto off

Press the UP/DOWN button to change the auto power off time. This can be set between 1 to 9 minutes or off.



Battery Ind

Press the UP/DOWN to change your battery indication. This can be set to Voltage, Capacity, Percentage, or off.

Self-Testing

Please ignore! This setting is for CYC Motor Ltd use only. DO NOT attempt to change these settings as you risk corrupting display settings.

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Clock

Press the MENU button to access the clock setting menu. Then, press the UP/DOWN button to set Year/Month/Day/Hour/Min/Sec.

Basic Settings

Wheel

Press the UP/DOWN button to change the wheel settings. The optional wheel diameter is 16 to 29 inch.

Battery

Press the UP/DOWN button to change between the battery voltage settings. The optional battery voltages are 36V to 72V. Kindly note that some older 750c displays might not have the 36V setting.

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Start password

Press the MENU button to access the password setting menu. The start input ON will activate on password upon start-up.

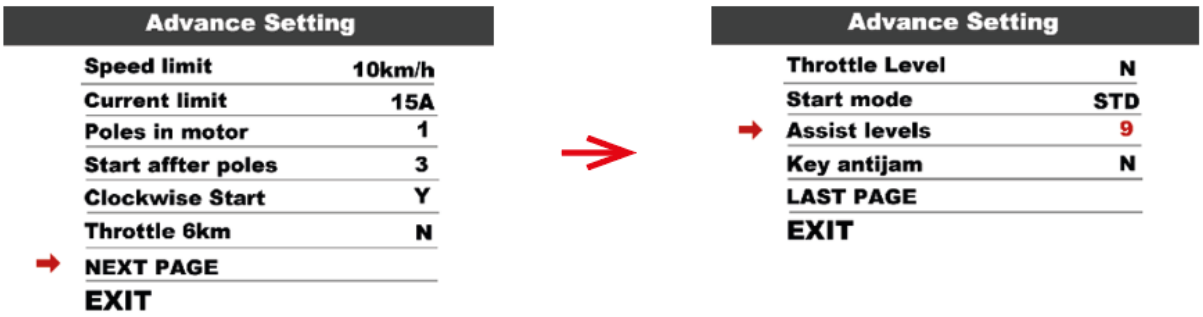
You will need to input the right password before start within 30 seconds. The display will power off automatically if the password is entered incorrectly three times.

Advance setting

Press the MENU button to get into the Advance setting menu. You will need to enter your Start Input Password. The default password is 1919.

There is only 1 parameter which needs to be set as all other should be neglected and will not affect your system: Assist levels.

Go to the NEXT PAGE on the display. Here, you can choose the number of assist levels (or gears) accordingly. The available options are 3, 5, or 9 assist levels.



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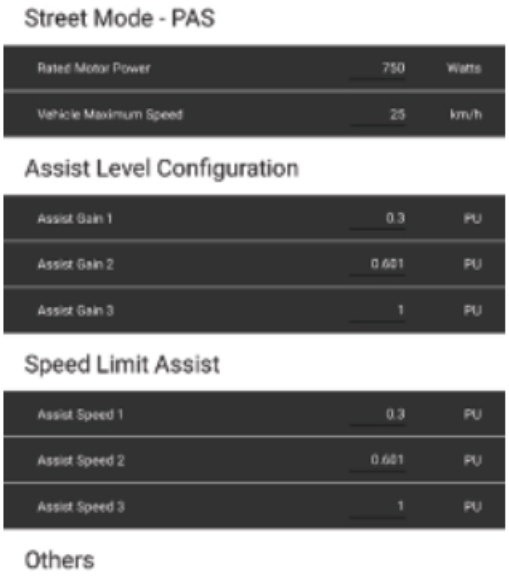
The power output will be distributed evenly across the chosen number of assist levels (or gears) according to the Assist Level Configuration and Speed Limit Assist settings on your CYC Motor (BAC) mobile app and Motor Levels Page on the CYC Ride Control App.

Note that the App Assist Level shown below can be customized in the app.



APP ASSIST LEVEL	3 ASSIST LEVELS	5 ASSIST LEVELS	9 ASSIST LEVELS
	0 (Neutral)	0 (Neutral)	0 (Neutral)
1 – 0.3 (30% BY DEFAULT)	1	1	1
			2
		2	3
			4
2 – 0.6 (60% BY DEFAULT)	2	3	5
			6
		4	7
			8
3 – 1 (100% BY DEFAULT)	3	5	9

Factory setting

Press the MENU button to enter the factory settings menu. Selecting YES will restore all parameters on the display to factory settings. Note that this will not affect your app settings.

Information

Press the MENU button to show information of the eBike, including the average and maximum speeds, the current trip distance, ODO, and range.

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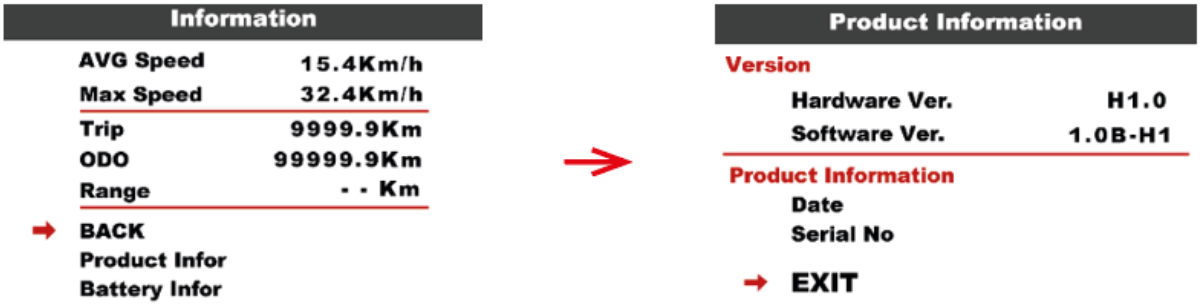
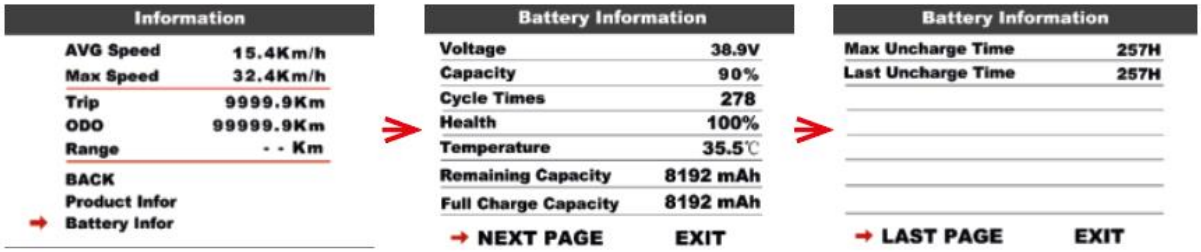
Press the MENU button to select Product Infor. This menu will show you the display's information including its hardware and software versions as well as the display's serial number.



Press the MENU button to select Battery Infor. This menu will show you all the battery information provided that the information is supported by the battery communication system.



Error Codes

In certain circumstances, an error code may appear on your display. Please refer to the CYC Motor (BAC) mobile application user guide for instructions on how to clear the errors and for further details on what these errors entail. Contact us for assistance.

Error Code	Description
Error 21H	Instant Resume not enabled
Error 22H	Throttle error
Error 24H	Hall sensor error
Error 30H	Communication error

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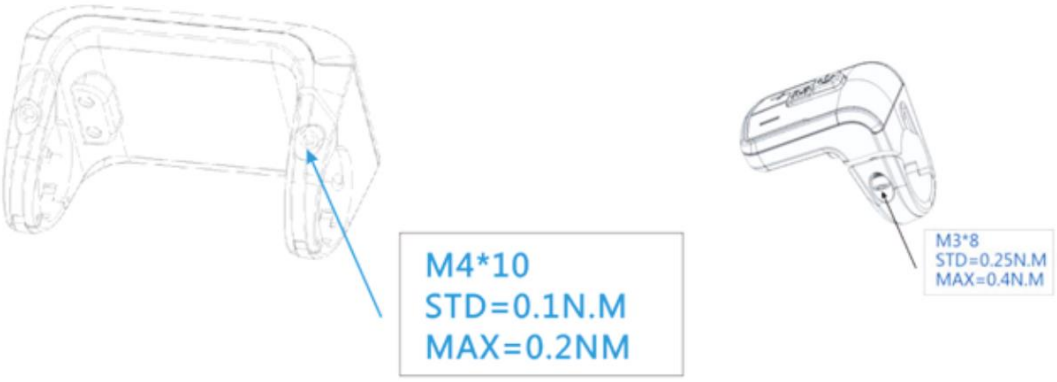
Assembly Information

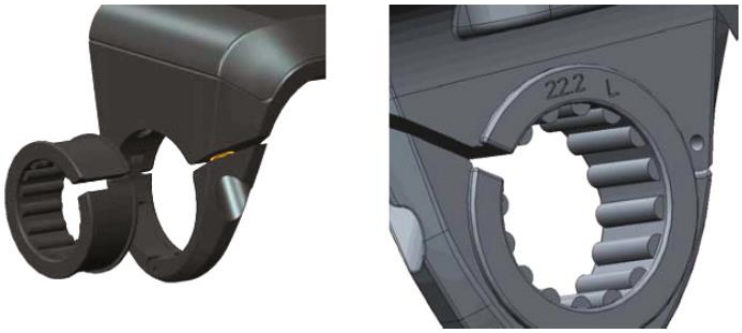
Please note that the torque requirements described below as excessive torque can cause damage.



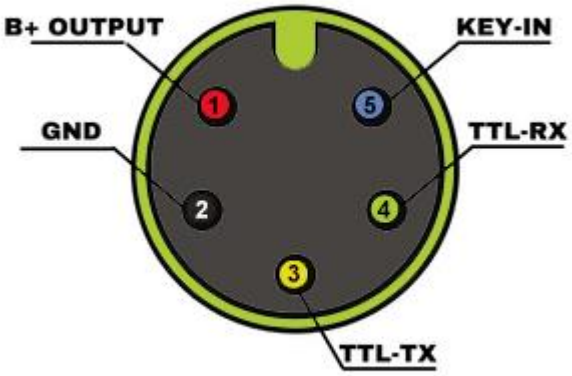
Compatibility

The clamps are suitable for 3x different handlebar sizes: 31.8mm, 25.4mm, and 22.2mm.

There are transfer rings included for 25.4mm and 22.2mm (marked with L or R) as shown below. Be sure to pay attention to the directions below to insert the transfer rings correctly.



Pin Layout



Male 5-Pin Connector

1. Red Wire: Anode (36V to 72V)
2. Black Wire: GND
3. Yellow Wire: TxD (display -> controller)
4. Green Wire: RxD (controller -> display)
5. Blue wire: Power cord to the controller

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Certification

CE / IP65 (waterproof) / ROHS

Be sure to contact us if further assistance is needed. Thank you!

Quick Start Guide

There are a few things you need to set up and check after installing your kit.

- Ensure that all wires are properly connected, and your system can switch on by pressing the display's power button. Check that the display shows your battery voltage and level. Should your display briefly show error 30H upon start-up, this is normal.
- Ensure that your pedal assist and throttle are working completely. To test this, connect to the CYC Motor (BAC) mobile app and change to Assist Level 0 on your display. You can test the PAS by looking at the app's dashboard and turning the crank set.
- Set up the correct information on your display. You will need to enter your wheel diameter, battery voltage (if incorrect), & your preferred number of assist levels.

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GENERAL MAINTENANCE

You are advised to regularly maintain, clean, and check the status of the bike and motor system as dirt will accumulate throughout the rides and additional strain will be taken by the drivetrain due to the powerful motor system. We recommend that users should inspect the bike and motor condition before and after each ride.

Disconnect all power supplies from the drive unit before starting any work (e.g., inspection, repair of the bike, maintenance work etc,) on the bike, transportation, or storage. Unintentional activation of the drive could lead to serious damage or injury.

Never reach into the chains, gears, or any moving parts while the bike is still in operation.

As the drive unit can get hot after use, be sure to give it some time to cool down before performing any maintenance.

Store the bike in a cool and dry place, sheltered from direct sunlight and potential rain.

Do not attempt to disassemble or modify the drive unit. The drive unit may only be repaired and maintained by qualified experts and only replaced with original spare parts. This will ensure that the safety/warranty of the drive unit is maintained.

The active moving parts (e.g., chain, gear, speed reducer etc.) should be regularly lubricated to maintain desired performance. In case of any abnormal activity, stop using the drive unit immediately and contact your CYC dealer.

Do not attempt to replace the product parts with the parts that have been found at a local bicycle store as the materials used in the drive unit are specifically designed for their purposes.

All bolts, nuts and screws are required to be tightened to the correct torque, if there is anything loose, stay off the bike. Torque specifications for each bolt and nut is provided.

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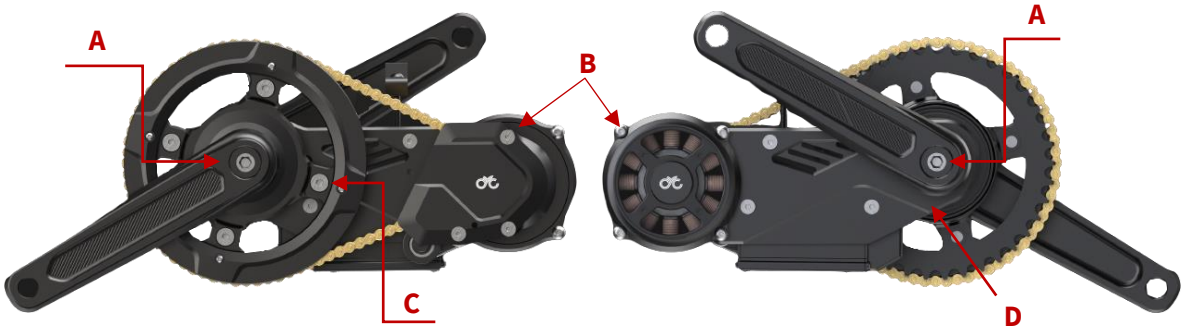
Torque Requirement for Bolts



X1 Pro Gen 3 Right View (Drive Side)

X1 Pro Gen 3 Left View (Non-Drive Side)

Listing	Component Name	Torque Requirement
A	Crank Arm Bolts	27 – 32 N.m.
B	Motor Mounting Bolts	4 – 5 N.m.
C	Chain Ring Bolts	5 N.m.
D	Adapter Plate	4 - 5 N.m.

Bolt Specifications

Listing	Component Name	Used For	Quantity
A	M4*10 Round Hex (Silver)	Controller Mount	3
B	M4*6 Flat Head Hex (Black)	Wire Out Cover	3
C	M2*4 for Torque Sensor	Torque Sensor	4
D	M15 ISIS Crank Arm Screw	Crank Arm	2
E	M4*16 Hex Socket Head	Left Plate, C Clamp	5
F	M3*6 Cup Head Hex (Black)	X6 Controller Mount	4
G	M3*12 Cup Head Hex (Silver)	Sprocket Cover	4
H	M4*55 Round Head Bolts	Gearbox Cover	1
I	M4*60 Round Head Bolts	Gearbox Cover	1
J	M4*65 Round Head Bolts	Gearbox Cover	2
K	M5*12 Round Hex	Dice	2
L	M5*75 Round Hex	Hanger	2
M	6*12*M5 Shoulder Bolt	Tensioner	2

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WARRANTY

This product has a 2-year warranty period. Man-made failures are excluded from warranty. Terms and conditions apply. Please visit www.cycmotor.com/refund-and-return-policy for more information.

For any queries or complaints, please contact us directly at support@cycmotor.com or visit our online store for replacement parts at www.cycmotor.com/shop.

PURCHASES FROM A CYC DEALER

CYC authorized dealers may have different terms and conditions. If you are experiencing any issues with your item/s and did not purchase the kit directly from us, kindly consult the appropriate dealer for assistance.

CONTACT INFORMATION

For customer support, including shipping, quotes, tax, and sales -> support@cycmotor.com

For technical assistance, including build assistance, recommendations, troubleshooting, and product related queries -> technical_support@cycmotor.com.

Office Hours

Monday to Friday

9AM – 6PM (Hong Kong Time HKT)

+852 3690 8938

DOWNLOADS

Kindly download the display & mobile app user manuals in our Downloads page (www.cycmotor.com/cycmotor-downloads) or scan the QR code. All materials listed below are freely available to download on our website.

What's included:

- Instruction Cards
- User Manuals
- CYC Mobile App User Guides
- 1:1 printouts for mounting reference

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DISCLAIMER

The electric bicycle system described in this user manual is designed for use only with compatible electric bicycles. It is important to read and understand this manual before using the system.

The manufacturer of this electric bicycle system shall not be liable for any direct, indirect, incidental, or consequential damages arising from the use or misuse of this system. Users assume all risks associated with the use of this system and are solely responsible for their safety while riding their electric bicycle.

PRIVACY POLICY

This service is provided by CYCMOTOR LTD at no cost and is intended for use. The text is used to inform users regarding our policies with the collection, use, and disclosure of personal information if anyone decided to use this service. If you choose to use this service, then you agree to the collection and use of information in relation to this policy. The personal information that we collect is used for providing and improving the service. We will not share your information with anyone except as described in this Privacy Policy. The terms used in this Privacy Policy have the same meanings as in our Terms and Conditions, which is accessible at CYCMOTOR LTD unless otherwise defined in this Privacy Policy.

Information Collection and Use

For a better experience while using this service, we may require you to provide us with certain personally identifiable information, including but not limited to Name (Optional). The information that we request will be retained by us and used as described in this Privacy Policy.

Please visit www.cycmotor.com/privacy-policy for more detailed information.

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