converted®

BRINGING BIKES TO LIFE

SUMMIT INSTALLATION INSTRUCTIONS

2020

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INTRODUCTION

Thank you for purchasing a Converted System Summit conversion kit. We are confident you will enjoy the freedom riding electric brings.

Bike/frame selection - The mid drive unit fits many different bike frames however some fit better than others and there are some which unfortunately won't convert. Generally speaking a basic hard tail(no rear suspension) bike with a traditional tringle frame will be the easiest conversion.
If you have a bike already and are unsure or if would like to buy a bike for conversion please contact us and we can give guidance... we have converted hundreds.

We have created printable templates as guides for battery and motor fitment. these are available for download from our website.

1.1 Installation Overview

Kit Contents

Open your box, get excited, but make sure you keep track of parts. Please see the checklist to make sure you have everything before you start

Prepare Your bike

Get your bike ready for the motor installation, remove all unecessary parts.

Install the motor

Install the drive unit, battery, and associated wiring.

Tidy up

clip all your cable ties, get everything looking smart

Safety Check

Your bike is going to be fast, so make sure everything is properly installed, all bolts are tight, brakes function, cables are all secure but allow adequate steering movement but cant get caught etc.

Get riding

While it is still your same beloved bike, it will be faster than ever and it may take a bit of getting used to.
We advise keeping things slow for starters, leave the top speed at the default 25kph.

1.2 Kit Contents

Each kit will contain the items shown below in the photograph please note that some of the items pictured are optional:

- [ ] Battery and keys
- [ ] Motor unit
- [ ] Cranks (optional Buzz bars pictured)
- [ ] Charger with AU/NZ mains cable
- [ ] Main EU-BUS wiring harness
- [ ] Mounting hardware (axle plate, mounting bolts, crank bolts)
- [ ] Converted System 3-button display
- [ ] Universal throttle
- [ ] Speed sensor with magnet and small mounting screw
- [ ] Gear shift sensor
- [ ] Mechanical brake levers with e-cutoff
- [ ] Chainring (optional 42T Bling-Ring pictured)

If you are missing any items please contact customer support.

Not pictured: Converted System operation manual, shipping boxes.

2.1 Tools required

Prep Tools-

- Allen Key set
- Bottom Bracket tool + socket wrench
- Screwdrivers (Philips, possibly Flat Head)
- Sidecutters
- Crank puller/extractor tool
- Adjustable spanner / ring spanners / socket set
- Chain breaker

Installation Tools-

as above +

- Converted System lockring socket or external bottom bracket tool + 1/2” socket wrench (ideally a torque wrench)
- C-spanner or Converted System lock cup socket. 44mm 16 notch.
- Half-round file (potentially, depending on frame)

Consumables/extras- items you may consider

- Extra cable/zip ties - some bikes need more than others
- Shift cable(core) - it can sometimes be difficult to a install shift sensor with an old cable (especially with frayed end) as you need to slide it onto the cable.
- New chain - We advise fiting a new chain. remember you have just added more power to your ride. A tired old chain may not like it,
- Cable extensions - We’ve tuned the cable lengths to cover most bikes, but if you’ve got a special build or cargo bike you might need some extensions.

3. BIKE PREPARATION

Installing your Converted System Summit kit is not hard, but you do need a certain level of mechanical knowledge. There are plenty of online video tutorials on youtube should you get stuck. Otherwise contact us and we can help you out.

3.1 Bike /Frame preparation

The Converted System Summit kit uses a Bafang mid-drive motor which replaces your existing cranks/Chainring(s)/bottom bracket. The folowing instructions relate to frames with a standard threaded bottom bracket, which is currently the most commonly found type. The internal diameter is 34mm and the width between 68-73mm. For other styles of bottom bracket you may require an additional fitting adapters. Please contact Converted System for further info. as required.

3.2 Cranks/bottom bracket/front derailleur

Remove the pedals from the original cranks if you are planning to re-use (generally 15mm spanner or allen key, Left pedal is reverse thread - turn clockwise to loosen)

Remove cranks,
- Remove the centre crank bolts (normally 8mm Allen Key)
- Using a crank extractor tool remove the cranks, (see manufacturer instructions).

If the bike is fitted with a front derailleur, break the chain to allow removal.
Disconnect the front deraileur cable and remove the derailleur bracket (this normally clamps around the seat tube).

Remove the bottom bracket with a Bottom bracket removal tool. Start on the left(non-drive) side of the bike. removing the cup completely.
Repeat on the opposite(chainring) side, this will be reverse thread so turn clockwise to loosen.
The bottom bracket should pull out completely.

Remove the front derailleur cables.

3.3 Handlebars

Some times it is easiest to remove everything off the handlebars before reinstalling in prefered order. The end setup of the handlebars comes down to personal preference, however you will no longer be running a front derailleur so the shifter can be completely removed.

If your bike is set up with cable brakes*, it is advised to replace with the included levers which incorporate cut-out switches which cut motor power when the brake is operated.

*Hydraulic brakes - For bikes with hydraulic brakes you may wish to run your existing brakes without cut-off. Converted recommends running some form of motor cut-off for safety. We can provide Tektro E-350 hydraulic E-bike brakes with built-in sensors or a manual cut-off switch. Sensors are also avabilable however suitability will depend on your individual setup and brake lever design.

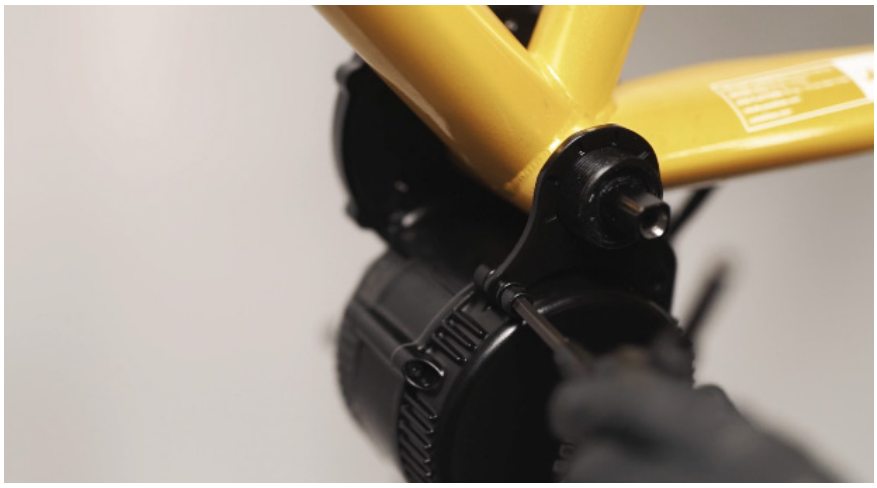
4.1 Bottom Bracket Preparation / Motor Fit

The folowing instructions relate to the standard threaded bottom bracket, which is currectly the most commonly found type. The internal diameter is 33.6mm-33.9mm and the width between 68-73mm. For other styles/sizes of bottom bracket you may require additional fitting adapters and spacers. Please contact Converted System for further info.

Ensure that the bottom bracket (BB) is clean, free of weld debris (you may need to file to get motor to slide in). The motor should be able to swing up till it comes in contact with the downtube.

Ensure the motor can be inserted fully and sits with the drive side flat against the botom bracket shell without touching chain stays etc.
For rear suspension bikes, ensure the pivots are clear of the casing for the full range of movement, else spacers may be required to give adequate clearance.

Fit the BB axle torque plate facing with the teeth facing the frame. Loosely tighten the M6 bolts (final tightening will occur in the next step). Use low strength Loctite



4. KIT INSTALLATION

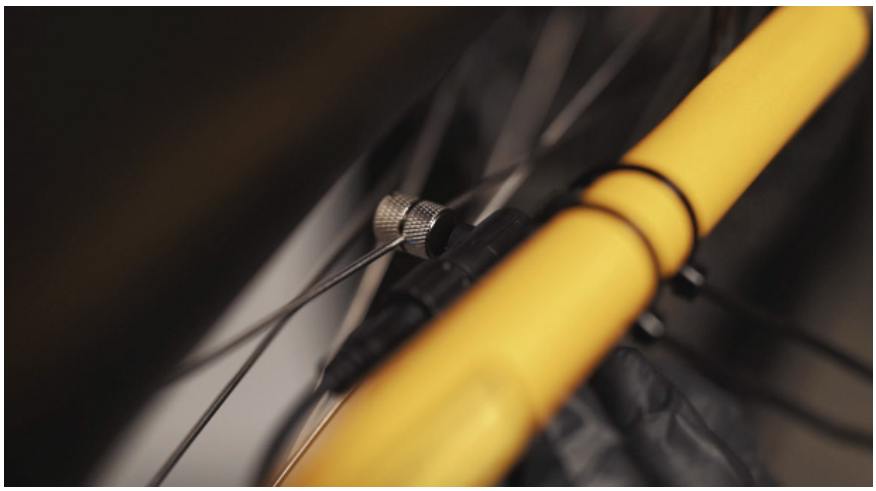
Holding the motor against the downtube, using a lock ring tool or C-spanner (see pic) tighten both the M33 lockring (33-40Nm torque) and the BB cup over the M33 (20-30Nm torque). Lock ring socket tools are available to purchase through Converted System.

Tighten the M6 bolts to final torque (34-40Nm).

4.2 Speed Sensor Fitting

Install the speed sensor on the rear chainstay. The ideal fitting point for the sensor and magnet is approximately 50mm from the rim. The mount for the sensor has double-sided tape but fasten further with two zip ties.

Install the magnet on a spoke. For best practice ensure that the magnet passes within 5mm of the sensor. The small black screw holds the mount in its horizontal position.



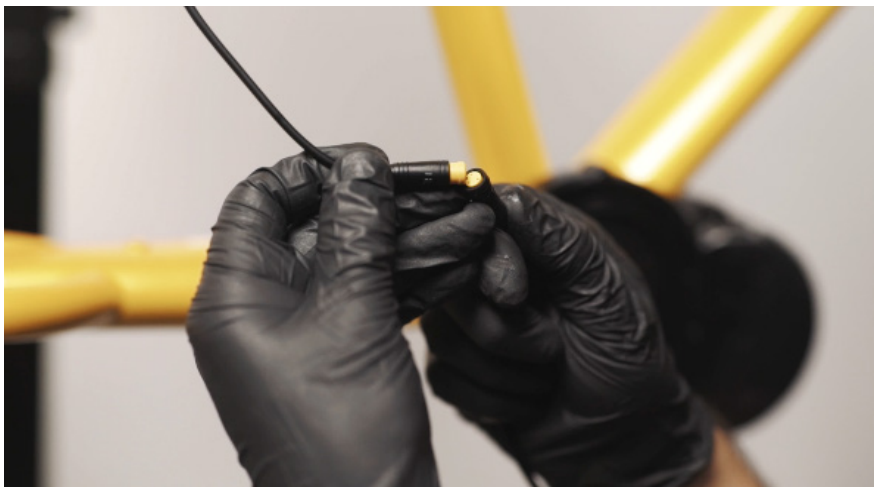
4. KIT INSTALLATION

Connect the speed sensor to the 3-pin plug running from the controller. On some bikes like the one pictured you may require the Converted System speed sensor extension.

4.3 Shift Sensor Fitting

Install the shift sensor on your gear-shift cable. Ideal position is on the upper chainstay. Feed the gear-shift cable through the sensor. There should be only a small amount of resistance. Secure with zip ties.

Connect the shift sensor to the yellow plug which runs from the bottom of the controller. The sensor will partially cut the motor power for one second when shifting.



4.4 Battery-Mount Fitting

Mount the battery cradle to the downtube ensuring that you have at least 2 bolts fixing the cradle in position.

Before completely tightening the bolts ensure that the battery has enough clearance from the seat-tube and can be slid forward/upwards on the rails for removal.

4. KIT INSTALLATION

IMPORTANT: Before continuing, remove the battery from the cradle to ensure the system is not powered on.

Plug the battery cable into the correct IP67 loom which runs from the motor controller. There is only one connector this shape, ensure connectors are pressed together as far as they can go.

Tidy up the wiring underneath the motor or behind the seat tube using zip ties so it can't catch on anything. Routing will depend on frame. With full suspension frames ensure cables do not get pinched or overly stressed/pulled at any stage of travel.

4.5 Fitting the Chainring

Fit the front chainring to the motor. In this image we have used a Converted System BLING**RING** (Summit Pro Kit / optional accessory). Tighten the M5 x 10mm bolts to 25-30nm.

Ensure the chainring is free to turn and does not touch the chainstay, else spacers or a smaller chainring may be required. see www.Converted System.bike for available options.

Refit the chain (ideally using a new chain). Check chainline is good and there is no frame interference.

4.6 Fitting the Cranks

Grease the motors axle using a general lithium based workshop grease.

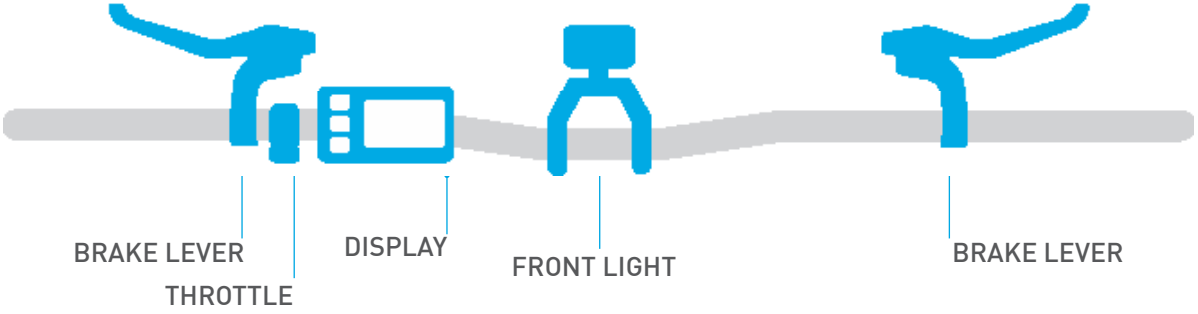
Fit the cranks (note L and R sides as pedal threads are different directions).
Insert and tighten the M8 crank bolts to 40nm. Note that the optional Converted System Buzz bar cranks which are self-extracting are used in this example.

4.7 Wiring Harness and Handlebars

Connect the main wiring harness to the motor ensuring the arrows on the connectors are aligned.

Secure with cable ties and neaten all wires.
Ensure cables ave adequate length to enable correct function of steering/handlebars.

4.8 Cockpit/Handlebars



Install the e-brake levers and throttle in the desired orientations. if unsure please contact your local installer/bike shop for assistance.
The throttle can be installed on either the left or right side of the handlebars. Note: As you may still have the rear gear shifter located on the right side, this may interfere with easy operation.

Install the display ,close to he left hand grip and plug the cables together. The connectors are colour coded for your convenience. On the harness side there is one display plug (green male) 2x ebrake cutoffs (yellow female) and 1x throttle (yellow male).

4.9 Cable tidy up and check

Check over all cables, ensuring no cables interfere with other systems on the bike, use cable ties as necessary.
Ensure all cable connectors are fully inserted.
Ensure there is adequate length allowed for around moving parts (steering, suspension etc) and cables are not strained at the full extent of movement.
Ensure cables cannot be caught or pinched between moving parts, suspension, tyres/wheels, cranks, chain etc.

5.1 Powering on and Charging

Once all electrical connections have been made, insert the battery into the cradle.
The system is powered on and charged from the section of the battery shown below.

Switch the battery on before powering ‘on’ the display.
For display operation please refer to the Converted System User Manual.

WARNING, YOUR SYSTEM IS NOW LIVE!
KEEP HANDS AND FINGERS WELL CLEAR OF ALL MOVING PARTS, FAILURE TO DO SO MAY RESULT IN INJURY!

5. SYSTEM TEST

5.2 Power assist check

With system on, check throttle and crank provide motor assistance.

Check the Converted System System User Mannual for operation instructions.

6. SAFETY CHECK

Check over all aspects of the bike as per your bike user guide, check all nuts, bolts, levers have been tightened to the approved factory settings.
Ensure brake function before riding.
If fitted, ensure the ebrake cutoffs stop the motor power when applied.

READ THE SYSTEM USER MANUAL

The system is very easy to use, however for your own safety please ensure you read and undersand the manual and understand how the system works.
Remember, your bike is faster than ever, please take your time to learn it's new capabilities.

Have Fun, keep safe.

If you have questions, please see our FAQ section on the website, or contacts us.

lekkie®

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