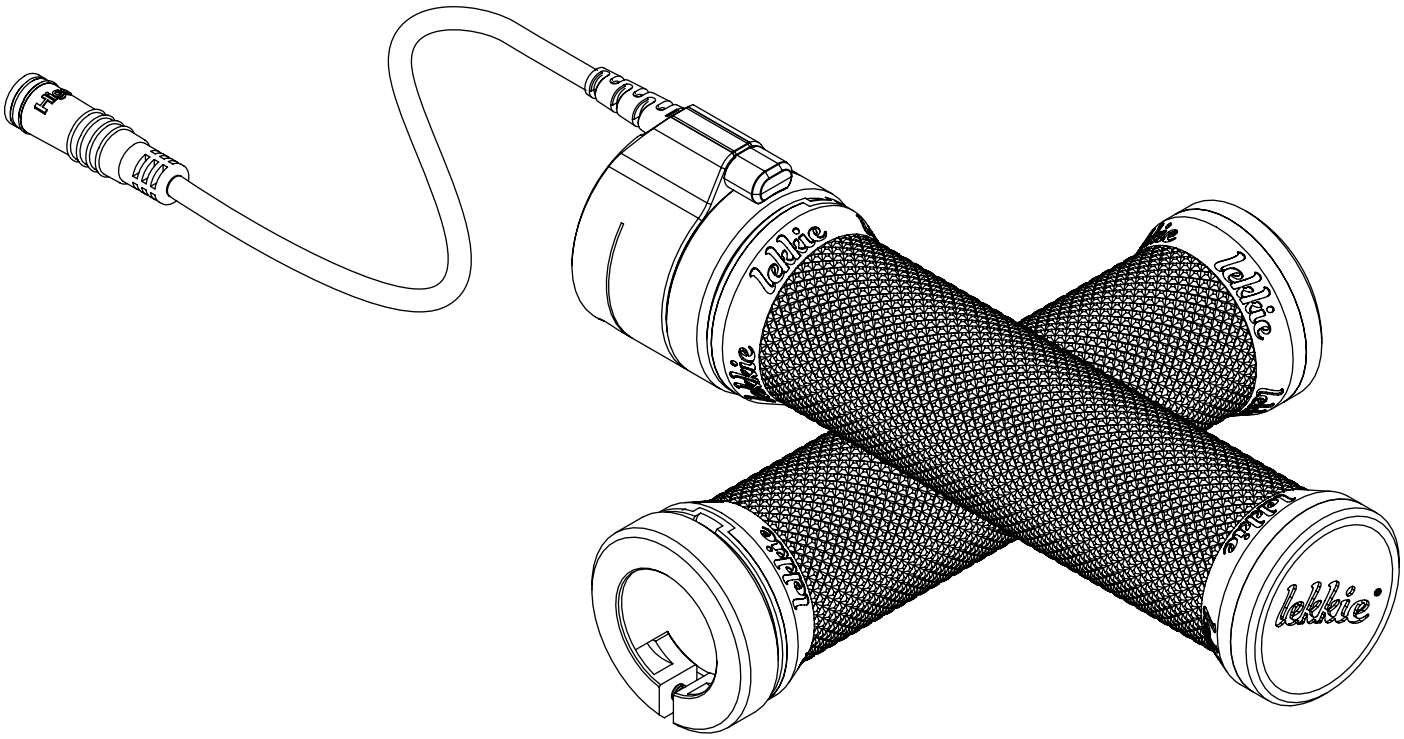
PACEMAKER **THROTTLE**

USER MANUAL



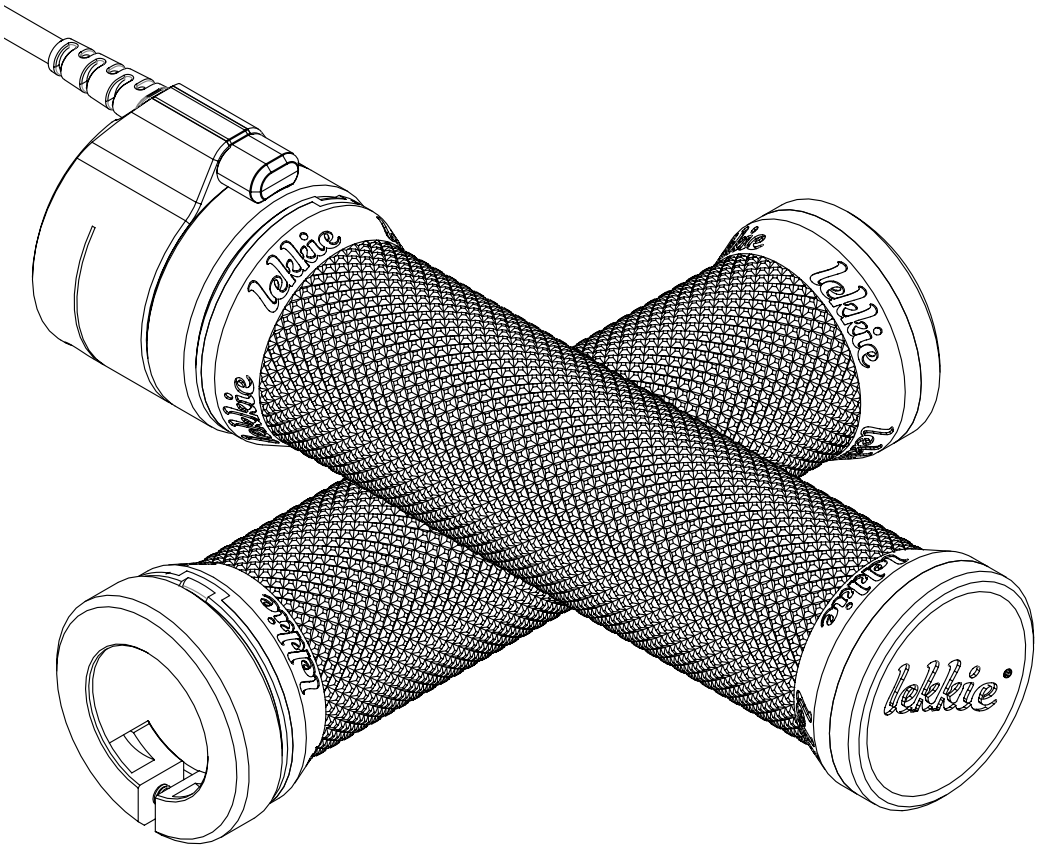
Doc-V1.5

PARTS LIST

INCLUDES

1X LEKKIE PACEMAKER THROTTLE AND GRIP

1X LEKKIE LOCK-ON GRIP



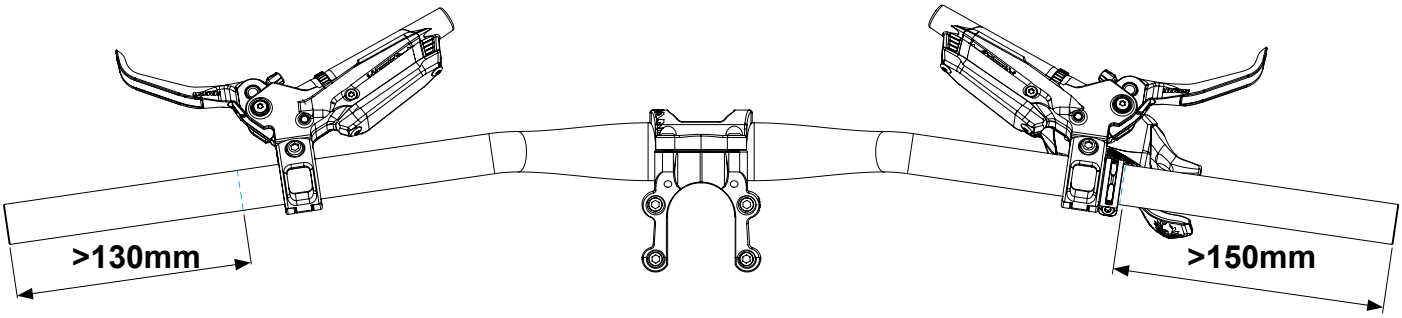
INSTALLATION

TOOLS REQUIRED

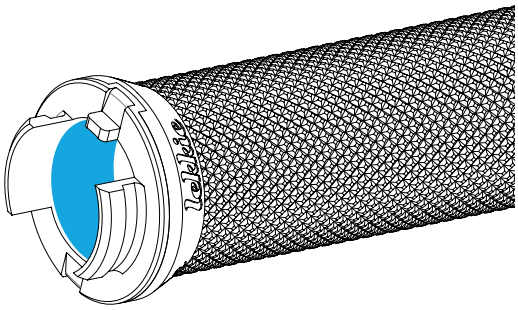
- 2.5mm hex/Allen key
- PTFE Grease

PREPARATION

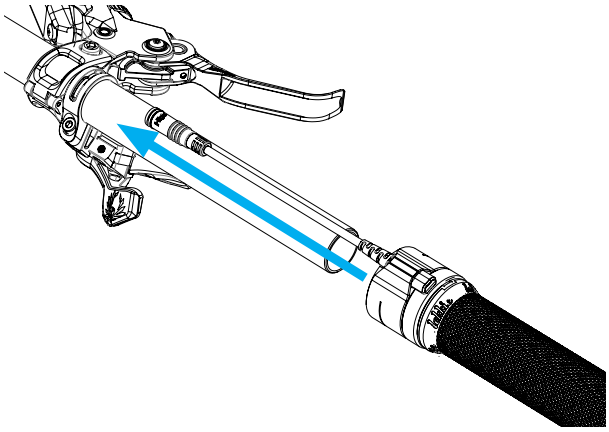
- Remove exiting grips
- Ensure there is enough free space on the bar. The Pacemaker has been designed with a super-low profile so you can run most standard shift levers on the RH side.
- Allow at least 150mm on the RH bar end for the throttle, and 130mm on the LH for the Grip mounting.
- Clean Bar ends and ensure the RH bar end is smooth, round and Burr free. A burr/rough surface may interfere with/damage the rotating grip parts.



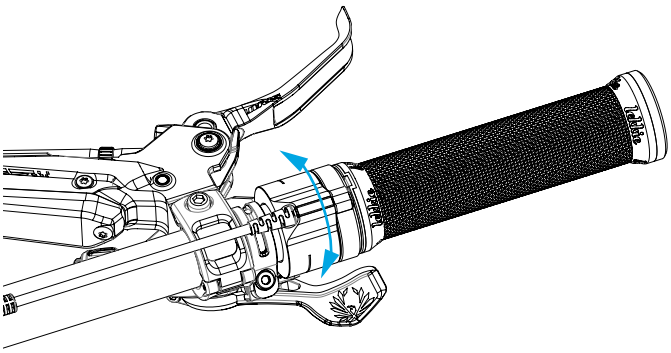
ASSEMBLY



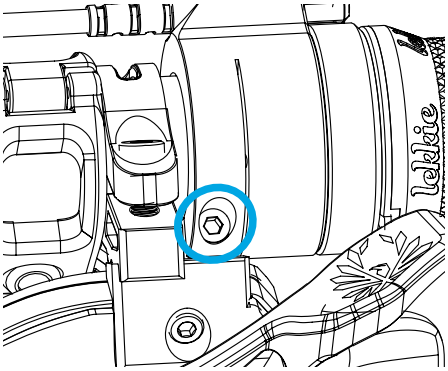
1. Apply a thin layer of PTFE grease onto the inside throttle grip surface.



2. Slide the assembly onto the RH bar end and ensure minimal friction.



3. Orient the throttle to your prefered angle, ensuring the cable is not pinched in any way by other components/levers. The end of the sensor illuminates when the system is powered on, so we recommend mounting with this visible on the top-rear of the bar.



4. Tighten the clamp Hex screw using a 2.5mm allen key (Max. torque 2Nm).
Ensure all levers and the throttle can move freely without collision.
Check the throttle turns freely without binding. It must rotate back to the start position on release.

SAFETY - TEST BEFORE RIDING

For your own safety, it is important to ensure your throttle is correctly installed. The Pacemaker functions exactly the same as a motorcycles throttle, mounted on the right hand of the handlebar ,twisting the throttle towards you increases the throttle signal.
We strongly recommend the use of brake levers with sensor cutoff when using any form of throttle.

Perform functional tests on a bike stand prior to test riding (with rear wheel suspended).

- Ensure the grip rotates smoothly and snaps back to the 'Zero' position on release.
- Check there is sufficient free play in the throttle before motor starts operating, and the motor cuts out on releasing the grip. If the motor runs on, software adjustment may be required.

THROTTLE SIGNAL

The pacemaker has been designed to run on Bafang BBS01/02 and HD motors, however will work with many other systems using the same signal inputs.
Throttle signal voltages vary from system to system (and bike to bike) input voltage must be between 4.6-5 VDC, Nominal output signal range will be between around 0.8-4.3V. Low input voltages will limit the maximum achievable throttle signal. (check your system specifications if not Bafang, Truckrun).
Wiring pinout may vary between systems even if using the same 3 pin connector. It may require a wiring alteration to operate. Please refer to the wiring/identifying process in the final section of this document.

TROUBLE SHOOTING

• Display Error 04 (Bafang) -This is a throttle signal error on system startup.	• Ensure the throttle has turned back to full Zero position before restarting the system • Ensure the sensor is fully seated into the aluminium housing. • If the system constantly throws this error, it may mean the throttle voltages may need adjustment through programming.
• Throttle does not reach 100%	• Max throttle signal voltage may be too low. • Ensure the sensor is fully seated into the housing • Ensure nothing is preventing the throttle from rotating fully. • Motor programming may not be set to 100% throttle on all assist levels. • Input voltage programming is required to adjust signal voltage levels. Progressively drop the top voltage by 0.05V until full throttle can be achieved.
• Throttle keeps running after releasing the lever	• Ensure the grip returns to 'zero' position. • Ensure the Sensor is correctly seated.

• Motor does not run under throttle	• Does the throttle have power? (the internal LED will illuminate. If not, there may be a connection or cable issue. the sensor can be replaced without having to replace the whole throttle. • Potential signal issue - check connectors and wiring.
• LED illuminates but throttle doesn't function (new install, non Bafang system).	• Wiring pinout likely does not match, or signal voltages are outside parameters - will require wiring - Please see last section or contact Lekkie for further assistance
• Throttle doesn't function (new install, non Bafang system).	• Wiring pinout likely does not match, or signal voltages are outside parameters - will require wiring - Please see last section or contact Lekkie for further assistance

MAINTENANCE

If you feel the throttle is sticking or doesnt move smoothly, periodically remove, wipe clean and regrease with a small amount of PTFE grease* as required, injecting grease into the internal spring area.

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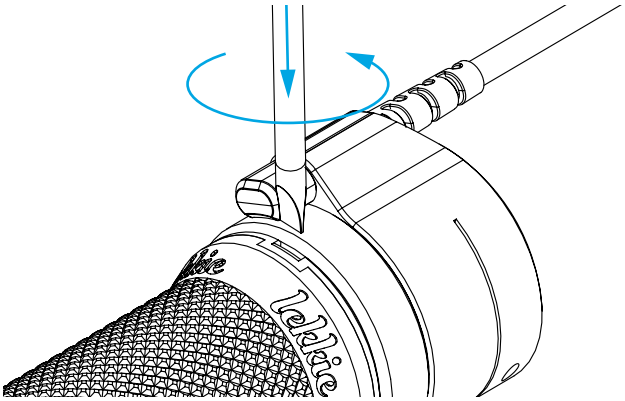
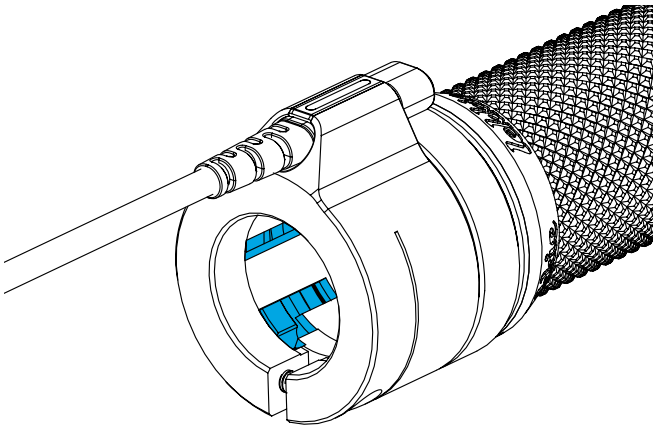
If your grip is worn, it is possible to replace the grip section without replacing the throttle mechanism.

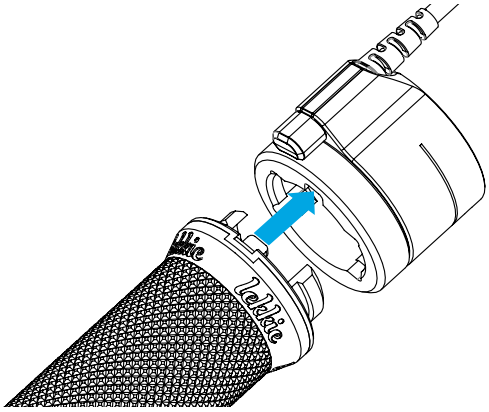
1. Unplug, and remove the assembly from the bar.



2. Insert a small flat bladed screw driver into the recess at the base of the grip, twist to release. Repeat on opposing side as required.



3. Apply a small amount of PTFE Grease, injecting grease into the internal spring area.



4. Clip the grip into the throttle mechanism, orienting with the locating lug.

* We recommend Rock'n'Roll Super Web Grease.

WIRING FOR NON-PLUG AND PLAY

If your motor is not a Bafang BBS01/02 or HD, there is still a very good chance that you can get your system up and running with the Pacemaker throttle, however some technical knowledge/ ability is required.
While the signal voltages and supply voltages are fairly standard across ebikes (5V input, 0.8-4.2V signal) the pinout can vary, which can make it trickier.
Provided your system runs three wires, there will likely be a 5VDC supply line (normally Red), Ground line (normally Black), and a signal Output line (normally Green, Blue or white).
Do not trust the wire colours though, you will require a Multimeter to identify the wiring output from your bike.
If your system doesnt provide a solid 5V, or the required signal voltages are different, unfortunately the throttle won't function (unless you can reprogram the motor parameters).

WIRE IDENTIFYING PROCESS

The easiest way to identify the bike output is by the following these steps (if you don't have a factory wiring diagram).
- Disconnect the existing cable throttle if installed.
- With the bike turned on, carefully(without shorting pins) measure the voltages between the connector pins(or wires) until you get a reading around 5V. bThis may be difficult if the plug is female so you may need to make some pins to put into the holes aor snip the plug off and strip the wires.
- Once you get a voltage(5VDC) you have identified the supply and ground wires.
- If the voltage is displayed as +ve, the multimeter probes are around the correct polarity (ie. Red/positive probe) will be on the 5V Supply line, the Black/negative probe will be on ground. If it reads -ve voltage it will be the other way around(eg Red probe on the Ground pin, black probe on Supply voltage). The other remaining Pin will be the signal line.

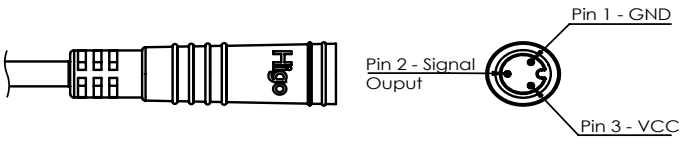
WIRE CONFIGURATION

Once pins have been identified, you will need to either make an adapter cable (cutting an extension cable and splicing wires to match the Bafang) or cutting the bike wiring and updating the plug to a 3 pin Male Higo/Julet connector with pinout as below.

If using a 3 pin extension cable it is important to again identify the pins as wire colours can vary depending on the manufacturer. If the cable is white/red/black, often the black wire is wired to pin 2 (opposite the alignment lug).

When you're finished you will want to have a male plug pinout to match the throttle's female. With the 5VDC, Signal and Ground as shown below:

To match the Pacemaker plug (female) pinout as below:



WARRANTY

At Lekkie we don't accept anything but the best workmanship and quality. If a part has slipped through our QC system and made it to your hands let us know and we will put it right.

If one of our products fails we want to know so we can make our products better. If you destroy a lekkie product in extreme use tell us. We can learn from this and sell you something to suit your needs.

If you are in any way unhappy with your Lekkie product get in touch so we can put it right.