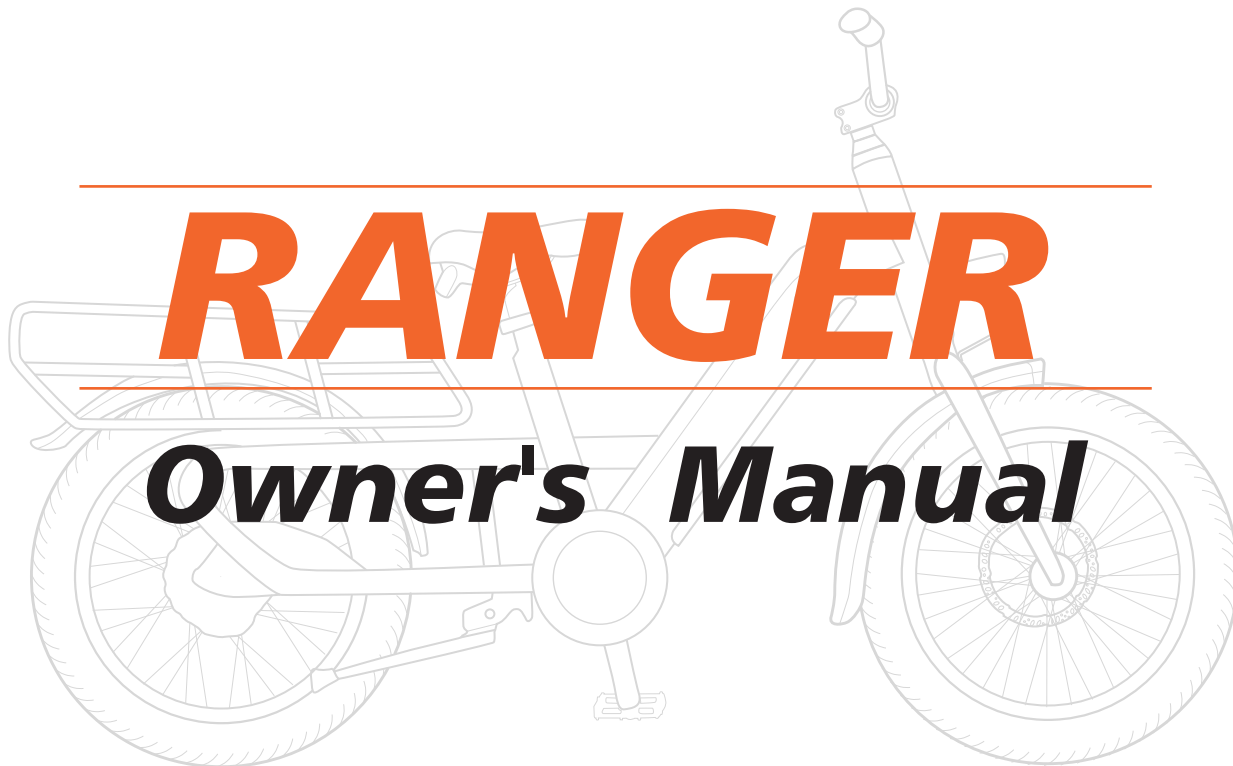


KBO

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RANGER

Owner's Manual



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About Manual

This manual contains details of the product, information on its operation and maintenance, and other helpful tips for owners. Read it carefully and familiarize yourself with the KBO Ranger before using it to ensure safe use and prevent tragic accidents. Be sure to retain this manual as your convenient KBO Ranger information source.

All information in this manual should be carefully reviewed and if you have any questions you should contact KBO Bike immediately. The notes contained within the manual and marked by this dialogue balloons symbol should also be given special care. Users should also pay special attention to information marked in this manual beginning with NOTICE.

Because it is impossible to anticipate every situation or condition which can occur while riding, this manual makes no representations about the safe use of bicycles under all conditions. There are risks associated with the use of any bicycle which cannot be predicted or avoided, and which are the sole responsibility of the rider. You should keep this manual, along with any other documents that were included with your bicycle, for future reference, however all content in this manual is subject to change or withdrawal without notice. Visit www.kbobike.com to download the latest version. KBO Bike makes every effort to ensure the accuracy of its documentation and assumes no responsibility or liability if any errors or inaccuracies appear within. Assembly and first adjustment of your KBO Bike require special tools and skills and it is recommended that this should be done by a trained bicycle mechanic if possible.

Product Specification

Battery	48V 17.5Ah Lithium Battery	Bike Frame	6061 Aluminum
Motor	750W High Speed Brushless Geared Motor	Brake	Tektro Aries 180mm Brakes
Display	LCD Display	Charger	US Standard 3.0A Smart Quick Charger
Derailleur	7-speed Shimano	Freewheel	Shimano 7 Speed
Speed	20 MPH	Shifter	Shimano
Pedal Assist	Intelligent 5-level Pedal Assist	Tires	20"×3.0"
Throttle	Half Twist Throttle	Product Weight	77 lbs
Charging Time	5~6 Hours	Total Payload Capacity	400 lbs
Recommended Rider Heights	4.11" ~ 6.3"		

Product Structure



① Handle	⑪ Battery
② On/Off	⑫ LED Head Light
③ LCD Display	⑬ Front Fork
④ Shimano Shifter	⑭ Front Brake
⑤ Throttle	⑮ Tire
⑥ Brake Lever	⑯ Pedal
⑦ LED Rear Light	⑰ Controller
⑧ Rear Rack	⑱ Derailleur
⑨ Saddle	⑲ Motor
⑩ Frame	⑳ Rear Brake

Safety Checklist



NOTICE: Before every ride it is important to carry out the following safety checks.

Safety Check	Basic Steps
Brakes	<ul style="list-style-type: none">· Ensure front and rear brakes work properly.· Ensure brake pads are not over worn and are correctly positioned in relation to the rims.· Ensure brake control cables are lubricated, correctly adjusted and display no obvious wear.· Ensure brake control levers are lubricated and tightly secured to the handlebars.
Wheels and Tires	<ul style="list-style-type: none">· Ensure tires are inflated to within the recommended limits displayed on the tire sidewalls.· Ensure tires have tread and have no BULGES OR EXCESSIVE WEAR.· Ensure rims run true and have no obvious wobbles or kinks.· Ensure all wheel spokes are tight and not broken.
Steering	<ul style="list-style-type: none">· Ensure handlebar and stem are correctly adjusted and tightened, and allow proper steering.· Ensure the handlebar is set correctly in relation to the forks and the direction of travel.

Safety Checklist

Safety Check	Basic Steps
Chain	<ul style="list-style-type: none">· Ensure the chain is oiled, clean and runs smoothly.· Extra care is required in wet or dusty conditions.
Cranks and Pedals	<ul style="list-style-type: none">· Ensure pedals are securely tightened to the cranks.· Ensure the cranks are securely tightened and are not bent.
Derailleurs	<ul style="list-style-type: none">· Check that the derailleur(s) are adjusted and functioning properly.· Ensure shift and brake levers are attached to the handlebar securely.· Ensure all brake and shift cables are properly lubricated.
Motor Drive Assembly and Throttle	<ul style="list-style-type: none">· Ensure the hub motor is spinning smoothly and the motor bearings are in good working order.· Ensure all power cables running to the hub motor are secured and undamaged.· Make sure the hub motor axle bolts are secured and all torque arms and torque washers are in place.
Battery Pack	<ul style="list-style-type: none">· Ensure battery is charged before use.· Ensure there is no damage to the battery pack.· Lock battery to frame and check to see that it is secured.

Assembly Instructions



NOTICE: The following assembly steps are only a general guide to assist in the assembly of your KBO Bike and is not a complete or comprehensive manual of all aspects of assembly, maintenance and repair. We recommend you consult a certified bicycle mechanic to assist in the assembly, repair and maintenance of your bicycle. For detailed instructions please view the KBO Ranger assembly video found at www.kbobike.com.

Step 1 : Install the handle bars. Remove the four screws from the stem, ensuring the linear markings on the handlebars are centered and handlebars are adjusted to a comfortable position. Finally, tighten the screws with the assembly tool.

Step 2 : Install the front wheel. Remove the plastic axle guards from the front wheel being sure not to touch the brake rotor set. Open the quick skewer and remove the thumb nut and cone spring. Carefully lower the fork and ensure the brake rotor goes into the caliper. Next align the dropouts with the axle of the wheel hub to make sure the fork dropouts are fully seated on the axle. Install the quick skewer starting from the brake rotor side of the wheel and then push the quick release skewer through the hub. Keep two cone springs pointed towards the wheel hub. Tighten the thumb nut until the quick release lever is held in line with the axle, and then use your palm of your hand to close the quick release skewer.

Step 3 : Install fenders&headlight. Attach the front fender and the headlight by the screw.

Step 4 : Use a bike pump with a press gauge to inflate tires to desired PSI.

Assembly Instructions

- Step 5 :** Install the pedals. The left and right pedals are marked on both ends. First, install the right pedal by tightening the pedal in a clockwise direction. The left pedal is tightened by turning the pedal in a counterclockwise direction. Both pedals should be tightened to 35 Newton meters by using a torque wrench.
- Step 6 :** Adjust the saddle height. loosen the seat clamp, remove the seat post and ensure the seat clamp is centered over the hole in the seat tube. Insert the seat post into the slot, adjust the saddle height to a suitable height and tighten the adjustment nut.
- Step 7 :** Adjust the seat position forwards or backwards. Use an allen wrench to loosen the seat adjustment bolt and make sure to stay within the marked adjustment range.
- Step 8 :** Install the taillight. Attach the taillight and the rear rack by the screw.
- Step 9 :** Check if the battery pack is locked into the frame of the KBO Ranger. When you want to take off the battery, insert the key and turn it to release the battery pack. The battery pack can be removed and charged separately.



NOTICE: Ensure all hardware is tightened properly and all safety checks in the following sections are performed before first use. Please refer to the assembly video on the Youtube channel KBO Bike and detailing a closer look if you have any questions regarding the assembly of your bike. If you are not able to ensure all the assembly steps in the assembly video are performed properly, or you are unable to view the assembly video please consult a certified local bicycle service provider for assistance in addition to contacting KBO Bike for help.

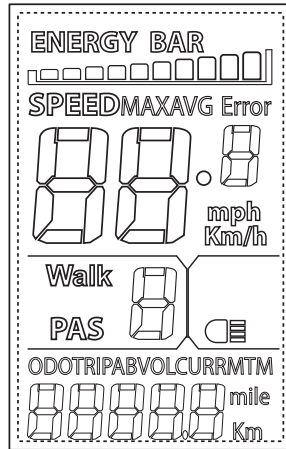
Recommended Torque Values

Hardware Location	Torque Required (Nm)
Handlebar	18-20
Stem	18-20
Saddle	18-20
Front Wheel	16-25
Rear Wheel	35-40
Bottom Bracket Parts	35-55
Pedals	35

Hardware Location	Torque Required (Nm)
Disk Mounting Bolts	6
Disk Caliper Mount	10
Crank Bolts	40
Rear Derailleur Cable Pinch	6
Front Derailleur Clamp	7
Saddle Post Clamp	7

Display Features

The image shows the various features and information displayed on the display.



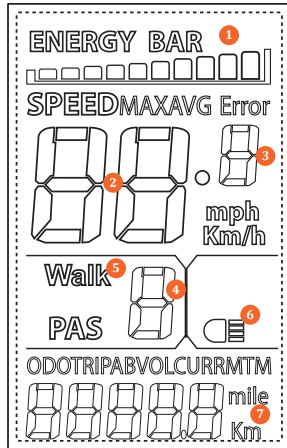
LCD DISPLAY



CONTROL PAD

Display Features

The image shows the various features and information displayed on the display.



LCD DISPLAY

1 BATTERY LEVEL INDICATOR (Current / Max / Average)
2 SPEED INDICATOR (Current / Max / Average)
3 ERROR CODE INDICATOR (In the Event of a Problem)
4 5 LEVELS OF ASSIST (0: No Assist. 5: Max Assist)
5 WALK MODE (On / Off)
6 BACKLIGHT INDICATOR (On / Off)
7 MULTI-FUNCTIONAL DISPLAY AREA: DISTANCE INDICATOR (Current Trip / System Mileage) VOLTAGE OUTPUT INDICATOR (Real-Time)

Routine Operation

General Settings

GETTING STARTED

1. The display pad is equipped with 3 buttons including “M”, “UP” and “DOWN”. The M button is the mode/switch button.
2. Press and hold the “M” button on the handlebar controls to turn on the display. Now, your ebike is ready to ride. To turn off, press and hold “M” for 3 seconds.
3. Press the “M” button on the handlebar controls to switch the contents of the multi-functional display area.
4. Press and hold the “UP” button on the handlebar controls to turn on/off the light.
5. The Level ebike offers pedal assist. When using pedal assist, an electric motor supplements the rider’s own effort. To use the pedal assist, simply start pedaling, then tap the “UP” or “DOWN” arrows to increase or decrease the amount of pedal assist.

Error Code	Definition	Error Code	Definition
30	Abnormal Communication	35	Motor Phase Problem
33	Abnormal Current	36	Motor Hall Defect
34	Throttle Fault	37	Brake Failed or Brake Applied While Turning On

When the error code is displayed, please promptly remove the fault. After the fault occurs, the electric bike will not be able to ride normally.

The range of your KBO Bike is the distance the bike will travel on a single full charge of the onboard battery pack. The range values in this manual are estimates based on expected usage characteristics. Some of the factors which affect the range include changes in elevation, speed, payload, and acceleration, number of starts and stops and ambient air temperatures. Tire pressure and terrain are also important variables to consider.

We suggest that you select a lower pedal assist level when you first get your KBO Bike to get to know your bike and travel routes. Once you become familiar with the range requirements of your travel routes, and the capabilities of your KBO Bike you can then adjust your riding characteristics if you desire.

The following table provides general estimates and outlines various factors' effective range and their combined estimated effects on range. This table is meant to help owners understand the factors that can increase or decrease range, but KBO Bike makes no claims to the range that individual users might obtain.

Best Practices for Extending Range and Battery Life



- ◆ *Do not climb hills steeper than 15% in grade.*
- ◆ *Pedal to assist the motor when climbing hills and accelerating from a stop.*
- ◆ *Avoid sudden starts and stops.*
- ◆ *Accelerate slowly.*

Parking Storage and Transport

Please follow these basic parking, storage and transport tips to ensure your bike is well cared for on and off the road.

- ◆ When pushing the vehicle manually, turn off the power to avoid accidental acceleration from the motor.
- ◆ It is recommended to park indoors.
- ◆ Switch the power off, and any lights to conserve battery. Remove the key from the bike and ensure the battery is locked to the frame or removed and brought with you for security.
- ◆ In public places, your KBO Bike must be parked in accordance with local rules and regulations.
- ◆ If you must park outdoors in rain, or wet conditions you should only leave your KBO Bike outside for a few hours and proceed to park the bike in a dry location afterwards to allow all the systems to dry out. Much like a regular bike, use in wet conditions mandates a more regular maintenance schedule to ensure your bike does not become rusty, corroded and to ensure all systems are always working safely.
- ◆ Do not park, store, or transport your KBO Bike on a rack that is not designed for the size and weight of the bike.
- ◆ Locking up your bike is recommended to ensure your bike is secure and the chance of theft is reduced. KBO Bike makes no claims or recommendations on the proper lock hardware or procedures to secure your bike, but we do recommend you take the appropriate precautions to keep your KBO Bike safe from theft.
- ◆ When storing your bike or carrying your bike on a rack for transport, you can remove the battery pack to reduce the weight of the bike and make lifting and loading easier.

Basic Battery Charging Tips

- ◆ The battery should be recharged after each use. There is no memory effect, so you can charge the battery after short rides without damage.
- ◆ The battery can be recharged on or off the bike.
- ◆ Remove the battery by turning the key and then pulling the battery forward and up until the battery detaches from the mating receptacle.
- ◆ The charger will automatically stop charging when the battery pack is full.
- ◆ Always charge in dry locations and indoors away from direct sunlight, dirt or debris.
- ◆ Do not cover up the charger when plugged in or charging, it air cools and needs to be left in an open space. Do not charge with the charger in the inverted position which can inhibit cooling and reduce the charger's life.
- ◆ Check the charger cables, charger and battery for damage before beginning each charge.
- ◆ The light on the charger will turn green when charging is complete and stay red while the battery charges. Ensure the light faces upward when charging

Charging Time

When the input and output plugs of the charger are connected properly, and the battery is not fully charged, the red charging indicator light should illuminate, showing that the battery is charging. The time that the battery takes to fully charge the battery is dependent on various factors including distance traveled, riding characteristics, terrain, payload, and battery age.



NOTICE: *The battery pack can take longer to charge when fully depleted and when the battery is new. As your battery ages you might also experience increased charging times, but this is only expected after 3-5 years of regular use. If your battery does not seem to be charging normally, and taking longer to charge than expected, please discontinue charging and contact KBO Bike immediately.*

To ensure safe riding conditions you must ensure your bike is properly maintained. You should follow these basic guidelines and see your certified bicycle mechanic at regular intervals to ensure your bike is safe for use.

1. Properly maintain batteries by keeping them fully charged when not in use.
2. Never immerse the bike or any components in water as the electrical system may be damaged.
3. Periodically check wiring and connectors to ensure there is no damage and the connectors are secure.
4. To clean, wipe the frame with a damp cloth soaked in a mild non-corrosive detergent mixture. Dry with a cloth.
5. Store under shelter; avoid leaving it in the rain or exposed to corrosive materials. If exposed to rain, dry your bicycle afterwards and apply anti-rust treatment to chain and other unpainted steel surfaces.
6. Riding on the beach or in coastal areas exposes your bicycle to salt which is very corrosive. Wash your bicycle frequently and wipe or spray all unpainted parts with anti-rust treatment. Damage from corrosion is not covered under warranty so special care should be given to extend the life of your bike when used in coastal areas or areas with salty air or water.
7. If the hub and bottom bracket bearings have been submerged in water, they should be taken out and re-greased. This will prevent accelerated bearing deterioration.
8. If the paint has become scratched or chipped in the metal, use touch up paint to prevent rust. Clear nail polish can also be used as a preventive measure.
9. Regularly clean and lubricate all moving parts, tighten components and adjust as required.

Basic Troubleshooting

Safety Check	Basic Steps	Most Common Solutions
It doesn't work	<ol style="list-style-type: none">1. Insufficient battery power2. Faulty connections3. Battery not fully seated in tray4. Improper turn on sequence5. Brakes are applied	<ol style="list-style-type: none">1. Charge the battery pack2. Clean and repair connectors3. Install battery correctly4. Turn on bike with proper sequence5. Disengage brakes
Irregular acceleration and/or reduced top speed	<ol style="list-style-type: none">1. Insufficient battery power2. Loose or damaged throttle	<ol style="list-style-type: none">1. Charge or replace battery2. Replace throttle
When powered on the motor does not respond	<ol style="list-style-type: none">1. Loose wiring2. Loose or damaged throttle3. Loose or damaged motor plug wire4. Damaged motor	<ol style="list-style-type: none">1. Repair and or reconnect2. Tighten or replace3. Secure or replace4. Repair or replace
Reduced range	<ol style="list-style-type: none">1. Low tire pressure2. Low or faulty battery3. Driving with too many hills, headwind, braking, and/or excessive load4. Battery discharged for long period of time without regular charges, aged or damaged5. Brakes rubbing	<ol style="list-style-type: none">1. Adjust tire pressure2. Check connections or charge battery3. Assist with pedals or adjust route4. Replace the battery
The battery won't charge	<ol style="list-style-type: none">1. Charger not well connected2. Charger damaged3. Battery damaged4. Wiring damaged	<ol style="list-style-type: none">1. Adjust the connections2. Replace3. Replace4. Repair or replace
Wheel or motor makes strange noises	<ol style="list-style-type: none">1. Damaged motor bearings2. Damaged wheel spokes or rim3. Damaged motor wiring	<ol style="list-style-type: none">1. Replace2. Repair or replace3. Repair or replace motor

Basic Troubleshooting

All users must read and understand this manual before first use. Additional manuals for components used on your bicycle may also be provided and should be read before use in addition to this manual.

- ◆ Ensure that you comprehend all instruction and safety notes.
- ◆ Ensure the bike fits you properly before first use. You may lose control or fall if your bike is too big or too small.
- ◆ Always wear an approved bicycle helmet whenever using this product and ensure that all helmet manufacturer instructions are used for the fit and care of your helmet. Failure to wear a helmet when riding may result in serious injury or death.
- ◆ Ensure correct tightening and setup are performed on your bicycle before first and checked regularly.
- ◆ It is your responsibility to familiarize yourself with the laws and requirements of operation of this product in the area(s) where you ride.
- ◆ Ensure handle bar grips are not damaged and properly installed. Loose or damaged grips can cause you to lose control and fall.
- ◆ Do not use this product with standard bicycle trailers, stands or bicycle racks. Contact KBO Bike to check if your equipment will work with the bicycle.
- ◆ Engaging in extreme riding is extremely dangerous and should be avoided. Although many articles/advertisements/catalogues depict extreme riding this is not recommended nor permitted, and you can be seriously injured or killed if you perform extreme riding.
- ◆ Bicycles and bicycle parts have strength and integrity limitations and extreme riding should not be performed or you risk damaging the components or becoming seriously injured or killed.
- ◆ Failure to confirm proper installation, compatibility, proper operation or maintenance of any component or accessory can result in serious injury or death.
- ◆ You should check the operation of the brake inhibitor switches before each ride. The brake system is equipped with an inhibitor which shuts down the power to the electric motor whenever the brakes are engaged. Check proper operation of brake switches before riding.
- ◆ Failure to properly charge, store or use your battery will void the warranty and may cause a hazardous situation.



As a parent or guardian, you are responsible for the activities and safety of your child. The KBO Ranger is not designed for use by children.

Warranty Info

Every bike is covered under a manufacturer's two-year all-inclusive warranty for the original owner against all manufacturing defects. KBO Bike warrants this product, including all individual components against defects in material or workmanship as follows:

KBO Bike LIMITED 2-YEAR WARRANTY

KBO Bike bicycle components including frame, forks, stem, handlebar, headset, seat post, saddle, brakes, lights, bottom bracket, crank set, pedals, rims, spokes, wheel hub, freewheel, cassette, derailleur, shifter, motor, throttle, controller, wiring harness, LCD display, kickstand, reflectors and hardware are warranted to be free from manufacture defects in materials and/or workmanship for a 2-year period from the date of original purchase.

Wear and tear is not covered under warranty. KBO Bike lithium ion batteries are warranted to be free from manufacturing defects in materials and/or workmanship for a 2-year period from the date of original purchase. The battery warranty does not include damage from power surges, use of improper charger, improper maintenance or other such misuse, normal wear or water damage.

The Following are Also Excluded from the Warranty:

- Liability for material defects does not cover normal wear which occurs from the manufacturers intended use of the product. Components such as the battery pack, motor system, braking system, drivetrain system, saddle, grips and pedals are all subject to intended use-related wear and are not covered under the warranty from normal wear.
- Damage arising from the use of the bike in a competition or other applications outside of normal intended use.
- Damage arising by improper tools or inadequate maintenance performed on the bike.
- Damage resulting from adding non-standard equipment, parts or technical modifications.

Additional Warranty Terms

This warranty does not cover any damage or defects resulting from failure to follow instructions in the owner's manual, acts of God, accident, misuse, neglect, abuse, commercial use, alterations, modification, improper assembly, wear and tear, installation of parts or accessories not originally intended or compatible with the bicycle as sold, operator error, water damage, extreme riding, stunt riding, or improper follow-up maintenance. This warranty does not include consumables or normal wear and tear parts (tires, tubes, brake pads, cables and housing, grips). KBO Bike will not be liable and/or responsible for any damage, failure or loss caused by any unauthorized service or use of unauthorized parts. In no event shall KBO Bike be responsible for any direct, indirect or consequential damages, including without limitation, damages for personal injury, property damage, or economic losses, whether based on contract, warranty, negligence, or product liability in connection with their products. All claims to this warranty must be made through KBO Bike. Proof of purchase may be required with any warranty request.

Components of the KBO Ranger are subject to higher wear when compared to bicycles without power assistance. This is because the KBO Ranger can travel at higher average speeds than regular cycles and has a greater weight. Higher wear is not a defect in the product and is not subject to warranty. Typical components affected are the tires, brake pads, suspension forks, spokes/wheels and battery pack.



When the useful life of a component is surpassed it can cause unexpected loss of function. This can result in serious injuries or even death. Therefore, pay attention to wear characteristics such as cracks, scratches or changes in the color or operation of components which could indicate useful life has been exceeded. Worn components should be immediately replaced.

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