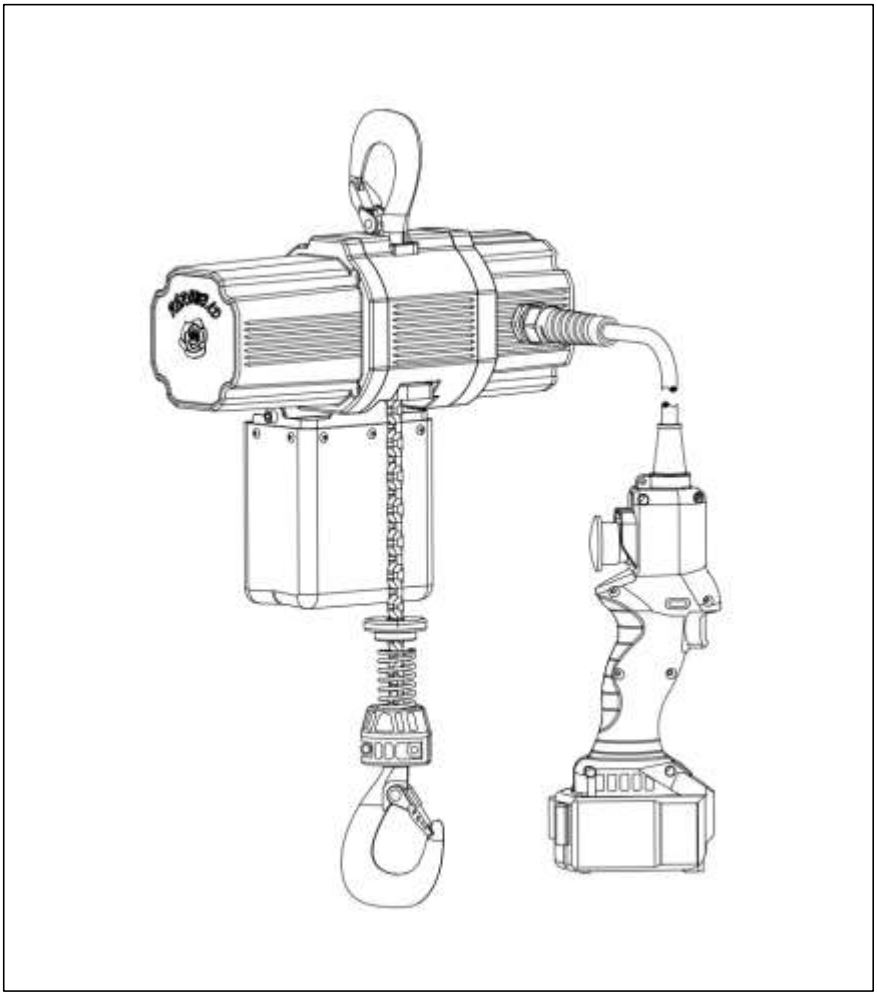
BRUSHLESS BATTERY ELECTRIC CHAIN HOIST

Operating Manual



Dear users,

Thank you for selecting the brushless DC electric chain hoist produced by Zhejiang Yongtian Mechanical and Electrical Manufactured Co., Ltd. In order to ensure your safety and to properly use and maintain the brushless DC electric chain hoist, please read the manual carefully before use, and keep the manual for future reference during maintenance.

I. Instructions to Safe Use (Important Guarantee)

For your safety, be sure to observe the following basic precautions when using this product. Failure to follow these instructions may result in serious personal injury or death.

Warning ⚠

Chemical and Fire Hazards

1. Before use, please carefully read the guidelines on installation and operating in the manual to understand your brushless DC electric chain hoist and its operation.

2. Wear gloves and safety protection articles during use to protect hands, eyes and ears.

3. Do not store the battery pack in toolboxes or pockets that contain nails, screws, keys, etc. to avoid a fire due to terminal short-circuit of the battery pack.

4. Do not use the battery pack in conditions of extreme ambient temperature and humidity to avoid battery pack leakage.

5. Be sure to handle and recycle the battery pack in accordance with local regulations.

6. Before handling, protect the terminals with insulating tape to prevent short-circuit.

7. Do not attempt to disassemble the battery pack. There are no user-serviceable parts inside.

8. Do not charge the damaged battery pack, and replace the damaged battery pack immediately, otherwise it may cause the battery short-circuit or a fire.

9. Do not incinerate the battery pack, even if the battery pack is severely damaged or completely worn out.

10. Do not operate in an environment containing explosive or flammable materials.

11. Be sure to take out the battery pack when the brushless DC electric chain hoist is not in use.

12. Do not make the battery terminals short-circuited, as this may cause sparks or combustion.

Use of Charger and Battery Pack

1. Always use chargers and battery packs with the same voltage and communication transmission interface provided or approved by the manufacturer; and charging the battery pack with different types of chargers may result in burst, thus causing damage and personal injury.

2. Do not use a charger with a damaged power cord or plug to charge the battery pack. Replace the damaged ones immediately.

3. Do not use the charger provided by the manufacturer to charge battery packs of other manufacturers.

4. Be sure to use a properly grounded single-phase socket to supply power for the charger and the battery pack.

5. Do not take out the parts from the battery charger to use them in other chargers without permission.

6. Do not charge the battery pack in a humid environment.

7. The operating temperature for charging the battery pack is 0℃-45℃, and the operating temperature for discharging is 0℃-55℃.

8. The suitable storage temperature of the battery pack is -15℃-30℃.

9. After the battery pack is fully charged, be sure to disconnect from the charger.

10. Do not use conductive objects for detection.

11. Do not completely discharge the battery pack.

12. If the battery pack is not used, it must be charged every six months.

13. Before using the brushless DC electric chain hoist, make sure to fully charge the battery pack.

Cutting and Burning Hazards

To avoid injuries to hands, fingers, etc.:

1. Wear thick leather gloves and safety protection articles to protect eyes and ears.

2. Do not make the battery terminals short-circuited, as this may cause sparks or combustion.

Falling or Crushing Hazards

1. Be sure to use the installation hardware, components and accessories approved by the manufacturer.

2. Make sure to spend time on learning common knowledge and technology of the brushless DC electric chain hoist to guide the operation.

3. Do not start the brushless DC electric chain hoist when it is in a packaged or lying state and when the chain is in a messy or not properly installed and suspended state, as this is likely to damage the brushless DC electric chain hoist.

4. Be sure to apply a small amount of lubricating oil on the chain before use to effectively prolong the service life of the chain and sprocket of the brushless DC electric chain hoist.

5. Do not impact the loaded chain, as the impact load can damage, overload and break the chain.

6. Be sure to select suitable fixing points that can carry the load. Make sure that your selected fixing points for installation can carry the corresponding load which is higher than that of the brushless DC electric chain hoist, otherwise there is a risk of falling.

7. Do not exceed the maximum lifting load weight listed in the product data sheet, including the capacity, safety factor, size, etc. of the chain.

8. After use, make sure to observe the chain for piling up, scattering, squeezing, etc.

9. Avoid turning on/off the brushless DC electric chain hoist too frequently, otherwise the motor and the motor controller may be damaged.

10. Do not increase the lifting length of the rope on the lifting hook of the brushless DC electric chain hoist.

11. Be sure to use the lifting hooks with protective buckles.

12. Be sure to ensure that the hanging structure is hung and protected during the lifting process.

13. Do not apply load on the tip or the protective buckle of the lifting hook. Apply load only to the center of the lifting hook.

14. Do not use lifting hooks with enlarged openings or bent or twisted tips.

15. Do not pull sideways to avoid piling up of the chain. This will damage the chain and the brushless DC electric chain hoist.

16. Do not use the brushless DC electric chain hoist to lift or move personnel.

17. Do not lift heavy objects overloaded, and do not lift the same heavy object with two or more hoists.

18. Do not lift fixed objects or heavy objects exceeding the rated weight.

19. **Do not allow anyone to stand under the heavy object when it is being lifted.**
20. **Do not hang the heavy object in the air for a long time to prevent permanent deformation of parts or accidents. No inspection or repair is allowed during the operation.**

Enwinding hazards of moving parts

1. When installing, operating, retracting or releasing the chain, always keep the hands and clothes away from the chain, the suspension hook and the lifting hookss. Do not let the chain slide through your hands.
2. Do not operate the brushless DC electric chain hoist under the influence of medicines or alcohol.

Lifting and Operation Safety

1. During the lifting operation, make sure to keep the lifting load of the brushless DC electric chain hoist within the sight range.
2. When lifting, be sure to stay away from the chain and the heavy load, and keep others away.
3. When lifting, be sure to always pay attention to the stability of the load and stay away from others. Alert all bystanders to any unstable conditions.
4. When lifting, make sure to ask the operator and the bystanders to pay attention to the chain and the heavy load.
5. While the operator is in operation, no one shall touch the chain or lifting hook while lifting or loading heavy objects.
6. Every time when lifting, first inch at the minimum speed, and then lift after the heavy load and the chain are tensioned. Do not start lifting directly when the chain is slack.
7. Be sure to check the chain and the lifting hook before operation. If there is any wear, twisted or damaged chain, it must be replaced immediately.
8. Damaged parts must be replaced before operation. Protect other parts from damage.
9. Avoid excessive inching (such as providing short pulses to the motor), and do not pull the load sideways.
10. Be sure to remove any components or obstructions that may interfere with safe operation.
11. During installation, replacement and maintenance of the chain or the hoist is not in use, do not start the brushless DC electric chain hoist.
12. Do not operate or install the brushless DC electric chain hoist without reading or understanding the manual.
13. If you are under 16 years old, do not operate this brushless DC electric chain hoist.

Other Safety Risks

1. Do not place the control cable close to or through the edges of sharp objects or overheated objects, avoiding possible cuts or damage to the control cable.
2. During installation, replacement and maintenance or when the hoist is not in use, do not power on the brushless DC electric chain hoist.
3. Do not operate the brushless DC electric chain hoist in a humid environment.
4. Be sure to use a battery pack with the manufacturer's recommended voltage and the same communication transmission interface to supply power for the brushless DC electric chain hoist. For details, please refer to the parameter table of the brushless DC electric chain hoist.
5. Do not operate the brushless DC electric chain hoist when the hoist is subject to a violent impact, fall or damage in other ways.
6. The rated lifting capacity of the brushless DC electric chain hoist is the lifting capacity on the nameplate.

7. Do not dismantle or alter any installation device on the brushless DC electric chain hoist.

8. In case of danger or emergency, press the red E-stop button in time. After the danger is relieved, manually rotate the mushroom-head button in the direction of the arrow to recover.

9. The upper and the lower limit mechanisms are safety devices that prevent the hoisting from exceeding the limit and protect the chain from being completely pulled out. Do not use the limiter to stop, and it shall also not be removed.

10. During the use, if you find that the brake fails and the heavy object falls rapidly, press the E-stop button immediately. After the load is removed, the hoist must be sent to the qualified repair personnel for repair before use.

11. Make sure that there is enough grease in each lubricating part. Calcium-based grease shall be squeezed into or applied to the reduction box, bearings, chains and other parts every six months.

12. The brushless DC electric chain hoist shall be subject to a comprehensive maintenance according to the frequency sensitivity of use. Generally, the comprehensive maintenance shall be performed at least once a year.

II. Operation Inspection and Service Environment

1. Please read the manual before use and run with no load after the normal installation and suspension, and then check the following items:

a. Whether the switch is sensitive, whether the chain can travel normally, and add appropriate lubricating oil to the chain to lubricate the chain regularly;

b. Whether the limiter moves flexibly and can be disconnected reliably;

c. Whether there is any abnormal noise during operation;

d. Whether the chain is damaged (or if it is damaged or broken during use, it shall be replaced immediately);

e. Brake inspection:

After the hoist is used for a period of time, it is necessary to check whether the brakes are functioning normally. When the hoist slides or the brakes do not work, the relevant parts shall be replaced in time;

f. Check whether the lifting hook is cracked or deformed before use, and replace the it promptly if so;

Service Environment

1. The ambient temperature for operation of the brushless DC electric chain hoist shall be within 5-35℃, the altitude shall be less than 1000M, and the ambient humidity shall be less than 65%.

2. The electric chain hoist can be transported and stored in a dry environment with the temperature between 5℃ and 30℃ and the ambient humidity less than 65%.

3. The brushless DC electric chain hoist is equipped with a temperature control device. When the hoist operates for a long time, the motor may stop, and it will automatically restart after cooling down.

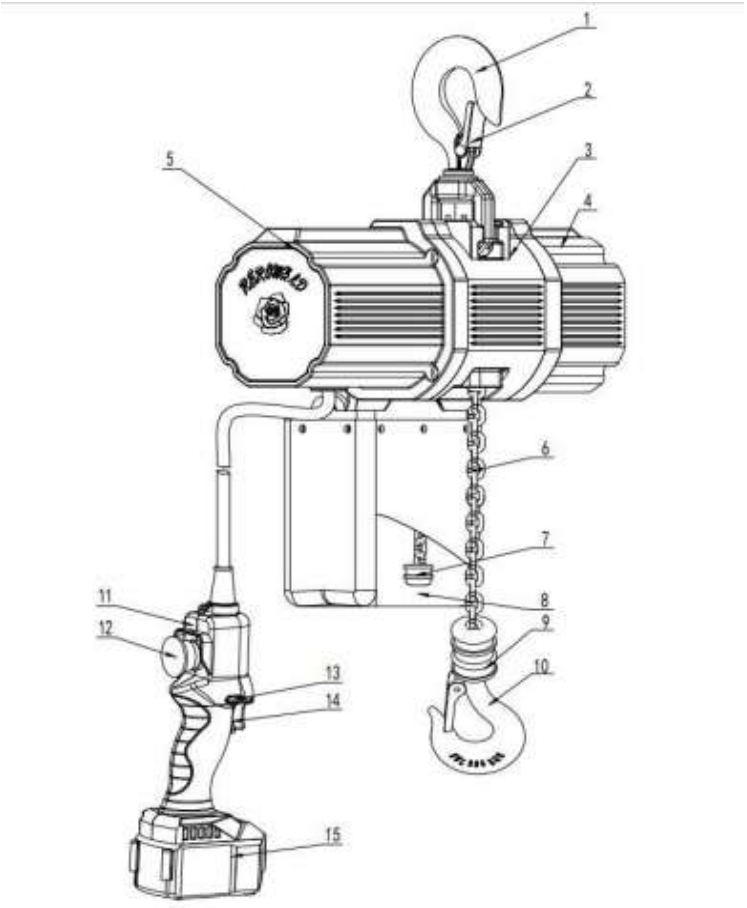
III. Purpose

The brushless DC electric chain hoist is designed with a brushless DC motor. It has a beautiful and high-end appearance and is light to carry. It is a novel lifting product that is safe and reliable, quick to install, easy to operate, sturdy and durable, and has a long service life.

The crane motor adopts the 18V (20V)/36V(40V) brushless DC motor. Be sure to use a battery pack with the same voltage and communication transmission interface recommended or approved by the manufacturer to supply power for the brushless DC electric chain hoist. For details, please refer to the parameter table of the brushless DC electric chain hoist. It is the most ideal professional lightweightlifting tool for conveying, handling, loading and unloading materials in any building site, and it is also suitable for the handling and lifting operations in plants, warehouses, households and hoisting sites.

<u>This product has applied for invention and utility model patents at home</u> <u>and abroad.</u>

IV. Main Structure



1. Suspension hook	2. Protective buckle	3. Sprocket box
4. Gear box	5. Electrical appliance cover	6. Chain
7. Lower limit block	8. Chain bag	9. Upper limit block
10. Lifting hook	11. Control handle assembly	12. E-stop switch
13. Direction paddle	14. Start switch	15. Battery pack

1. Suspension hook: It adopts the snap-in suspension hook, so that it provides higher safety and quick installation, and it can be operated by a single person.
2. Protective buckle: It prevents the product from shaking and decoupling during the hoisting process, and it can stabilize the center of gravity during operation of the hoist to effectively avoid falling off.
3. Sprocket box: Comprising the chain, the sprocket, the chain threading mechanism, and the upper and the lower limit mechanisms. It helps the chains to be arranged neatly for going in and out, reduces the enwinding, squeezing and deformation of the chains during the hoisting process, and prolongs the service life of the chains.
4. Gear box: Comprising a secondary gear rotating mechanism. It has a small size, large carrying capacity and stable operation.
5. Electrical appliance cover: The motor, the primary gear rotating mechanism, and the drive board are built-in and installed in the electrical appliance cover.
6. Chain: It has the characteristics of corrosion resistance, wear resistance, high strength, etc.
7. Lower limit block: After the heavy object is lowered, and when the chain is completely released, the lower limit block touches the lower limit mechanism position on the sprocket box, and it touches the switch to cause the limit switch to disconnect the circuit, making the hoist stop to ensure safe operation.
8. Chain bag: It is used to store chains.
9. Upper limit block: After the heavy object rises, the upper limit block touches the upper limit mechanism position on the sprocket box, and it touches the switch to cause the limit switch to disconnect the circuit, making the hoist stop to ensure safe operation.
10. Lifting hook: It is used to connect with the heavy object during the vertical hoisting.
11. Control handle assembly: It comprises the E-stop switch, the handle, the direction paddle, the start switch and the battery pack.
12. E-stop switch: It is a emergency brake switch for stopping the hoist in emergency situations.
13. Direction paddle: It is used to switch chain in/out (forward/reverse rotation).
14. Start switch: It is used to supply power for the brushless DC hoist by pressing and holding when needed.
15. Battery pack: The voltage of the battery pack is 18V(20V)/36V(40V). Be sure to use the battery pack with the same voltage and the communication transmission interface recommended and approved by the manufacturer to supply power for the brushless DC electric chain hoist. For details, please refer to the parameter table of the brushless DC electric chain hoist. The battery capacity can be checked through the LED light by pressing the capacity display button of the battery pack.

V. Parameters of Brushless DC Electric Chain Hoist:

Model	YT-RERW-DCCH250	YT-RERW-DCCH500	YT-RERW-DCCH1000
Rated voltage	18V（20V）	36V（40V）	36V（40V）
Power	320W	850W	850W
Lifting weight	250kg	500kg	1000kg
Lifting speed	3m/min	3.5m/min	1.75m/min
Lowering speed	4m/min	4.5m/min	2.25m/min
Chain	φ4×12mm	φ5×15mm	φ5×15mm
Work safety level	A2 （16000 full load cycles）	A2 （16000 full load cycles）、	A2 （16000 full load cycles）
Working system	ED 40%	ED 40%	ED 40%
Insulation grade	B	B	B
Protection level	IP23	IP23	IP23
Net weight of single hoist	9kg	11.5kg	12.5kg
Sound pressure value ※	71 dB(A)	71 dB(A)	71 dB(A)

※ The numerical value only represents the maximum noise emitted by this hoist. Whether the operator is required to wear a hearing protector cannot be determined here. It depends on how much noise reaches the ears of the operator, but also on the surrounding environment (such as other sound sources nearby). Even if it is not explicitly required, for the safety of the operator, the hearing protector shall always be worn while working.

※ A-weighted emission sound pressure level was measured according EN ISO 11201. The test cycles and measurements were repeated at least three times, the test result being the arithmetic average value.Hoists are primarily integrated in cranes. The A-weighted emission sound pressure level was measured at a distance of 1 m from motor.

This product has the working system of an ED 40% intermittent cycle, running for 4 minutes, stopping and resting for 6 minutes, and working intermittently every 10 minutes as one operating cycle.

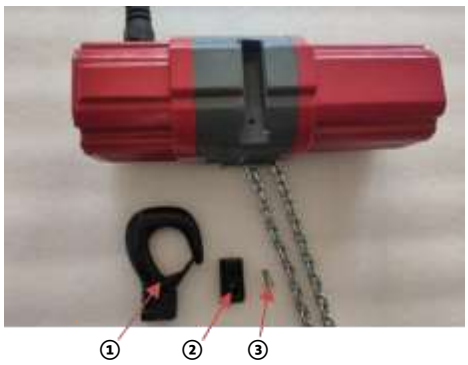
VI. Installation and Debugging of Brushless DC Electric Chain Hoist

1. After unpacking the brushless DC electric chain hoist, check whether the accessories and spare parts are consistent with the manual, whether there are bruise or damage, whether the pull line

threads have fall-off, whether there is rain drenching, water immersion, etc. If there is rain drenching or water immersion, drying treatment shall be carried out.

2. Installation method for suspension hook of brushless DC electric chain hoist:

(Figure 1)



(Figure 2)

(Figure 3)

(Figure 4)

(Figure 5)

(Figure 6)

Installation steps of suspension hook:

(Figure 1): ① Suspension hook, ② Fixing block, ③ Fixing screw;

(Figure 2): Find the location where the suspension hook needs to be installed as shown in the figure;

(Figure 3): Install the suspension hook on the upper end of the sprocket box through a slide as shown in the figure;

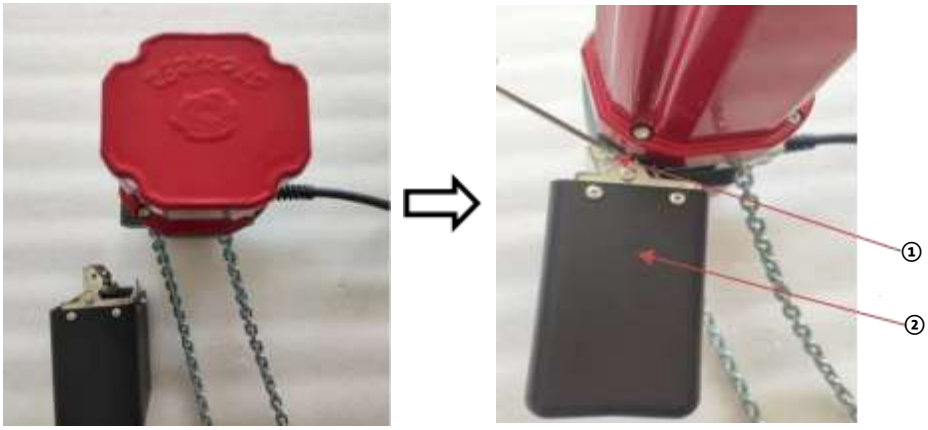
(Figure 4): After installing the suspension hook on the upper end of the sprocket box through a slide as shown in the figure, install the upper fixing block;

(Figure 5): After installing the suspension hook on the upper end of the sprocket box through a slide as shown in the figure, install the upper fixing block in a fixed manner through fixing screws;

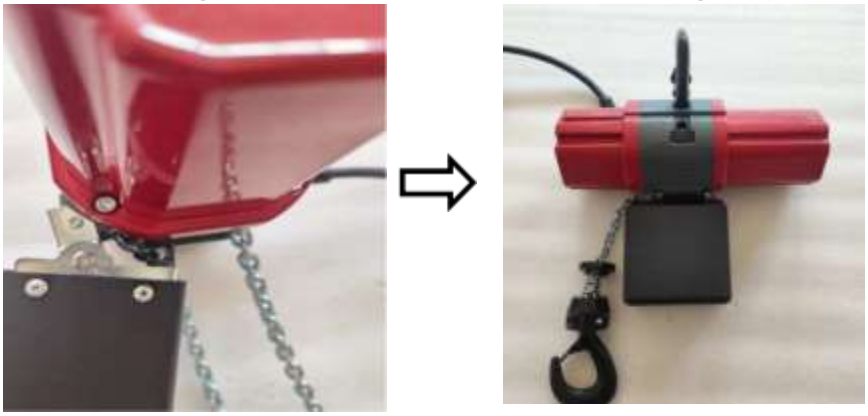
(Figure 6): It is the state diagram of completing the installation of the suspension hook as shown in the figure.

3. Installation method for chain bag of brushless DC electric chain hoist:

(Figure 1) **(Figure 2)**



(Figure 3) **(Figure 4)**



Installation steps of chain bag:

(Figure 1): Find the chain bag ① from the packaging box, the fixing screws ② are usually in the accessory bag or the screw hole position of the hoist fixing chain bag, and remove them to install the chain bag;

(Figure 2): Find the location where the chain bag needs to be installed as shown in the figure, and use the fixing screw to fix the direction of the left and right chain bag when installing one side;

(Figure 3): Install the fixing screw on the other side of the chain bag as shown in the figure, and lock the fixing screws on both sides of the chain bag;

(Figure 4): It is the state diagram of completing the installation of the suspension hook and the chain bag as shown in the figure.

4. When the customer requires to replace the damaged chain or configure a chain separately during the initial use, the diameter, safety factor and other requirements must comply with the certification standards of the manufacturer.

5. The brushless DC electric chain hoist of this model adopts a DC lithium battery to supply power, with the rated voltage of 18V (20V)/36V (40V). Charge the battery pack as follows in the first use:

① Take out the charger and connect the charger to a standard 110 - 240V socket; and a red light shall appear on the charger.

Note: Before connecting to the battery pack, always connect the charger to a standard 110 - 240V socket.

② **Insert the battery pack fully into the charger slot until you hear a click sound or see the battery button switching back to the flat position.**

③ **Charge the battery pack until the light on the charger turns green stably. (Depending on the capacity of the battery pack, the charging time generally takes 2-4 h).**

④ **Unplug the charger from the socket, disconnect the power supply, and then press the battery pack button to remove the battery pack. Disconnect the battery pack from the charger.**

⑤ **Press the battery pack capacity display button to check the battery pack capacity through the LED light.**

⚠ **Note: Do not leave the battery pack on the charger after the charging is complete. Unplug the charger from the socket and remove the battery pack. The battery pack must be fully charged before the first use.**

6. Before installing the battery pack of the brushless DC electric chain hoist to the control handle for power-on use:

① **Hold the control handle assembly, turn the E-stop switch and keep it on;**

② **After pressing the left direction paddle to the bottom, keep pressing the start switch to rise;**

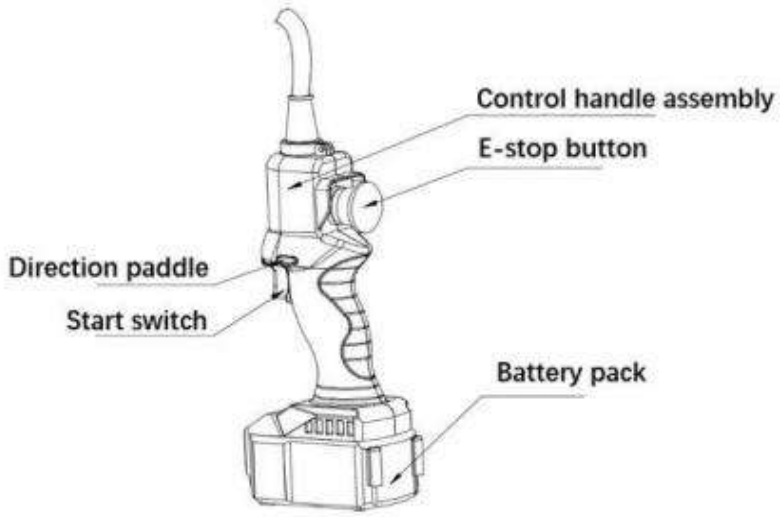
③ **After pressing the right direction paddle to the bottom, keep pressing the start switch to fall;**

a) **Pay attention to the upward and downward arrow prompts on the direction paddle;**

b) **When the direction paddle is in the middle position, the upward and downward arrows will not be obvious. At this time, the start switch will not be pressed, and the hoist will not operate.**

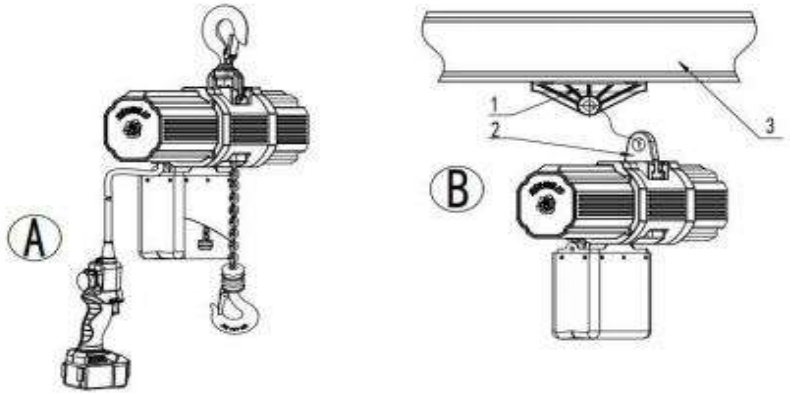
⚠ **Note: To carry out the no-load lifting test run, loaded debugging can be carried out only after confirming that the lifting is reliable and the braking is flexible.**

(The control handle assembly is as shown in the figure below)



7. The brushless DC electric chain hoist is provided with an over-heat protection device. If it stops due to overheating, the motor can be cooled to a certain temperature before operating again. Therefore, too frequent inching of the lifting switch shall be avoided when the brushless DC hoist is in loaded lifting, so as to prevent from damaging the motor.

8. Optional installation method of brushless DC electric chain hoist (as shown in figure below)



Type B: 1 - Track trolley, 2 - Trolley mounting and fixing plate, 3 - Aluminum alloy track

Note: The fixing points for installation of the brushless DC electric chain hoist must be stable, and they shall be able to withstand a load-bearing gravity greater than the rated lifting capacity for a long time.

VII. Common Faults and Elimination Methods

Common Fault	Main Cause	Elimination Method
The motor does not rotate when the start switch is pressed by hand	1. The power is not connected 2. The wiring is broken or loose 3. The switch is out of order 4. The direction paddle is in the middle position 5. The limiter is not reset or the travel switch is out of order 6. It is in the thermal protection status	1. Power on (insert the battery pack and turn on the E-stop switch) 2. Check the wiring and repair 3. Repair or replace the switch 4. Toggle the direction paddle 5. Check the limiter and replace the travel switch 6. Start up after it is cooled down or replace the thermal protector
The motor has large noise when the start switch is pressed by hand, and the loaded cannot be hoisted	1. The voltage of the battery pack is too low 2. The drive board is damaged 3. The components are damaged	1. Check whether the battery pack is fully charged, and replace the battery pack 2. Send it to the qualified personnel for repair 3. Send it to the qualified personnel for repair

It is unable to brake or the sliding amount is too much after power outage	1. The drive board is damaged 2. The gear is worn 3. The components are damaged 4. The motor is damaged	Send it to the qualified personnel for repair
The noise is abnormally increased	1. It is poorly lubricated 2. The gear bearing is damaged after a long time of use 3. It is poorly assembled or there are bumps	1. Add enough grease 2. Check and replace the gear or the bearing 3. Recheck the assembly and repair the bumped parts
The limiter is out of order	1. The travel switch for limiting is out of order 2. The limiter has blockage	1. Repair or replace the travel switch 2. Check and repair the limiter

VIII. Maintenance

8.1 Cleaning

1). Keep all safety equipment, vents and motor housings as free of dust and dirt as possible. Wipe the device with a clean cloth or purge with the compressed air at low pressure.

2). We recommend that you clean the device immediately after each use.

3) Clean equipment regularly with a damp cloth and soft soap. Do not use cleaners or solvents, which may attack the plastic parts of the device. Make sure no water seeps into the device.

8.2 Maintenance

Important!

Before starting any maintenance work, always ensure that the brushless DC electric chain hoist is not in the operation state.

In the following cases: one cycle represents one lifting and lowering movement of a load. Periodic inspection refers to the inspection after 100 cycles.

1) Regularly check whether the upper and the lower limit switches on the brushless DC electric chain hoist operate properly. Carry out this test as follows: when the upper limit block on the chain reaches the maximum height, it touches the upper limit mechanism, and the upper limit mechanism touches the limit button in the controller mechanism, the motor must stop. When the lower limit block at the tail of the chain touches the lower limit mechanism button, the motor must stop. (No- load test).

2) Check the power control cable regularly.

3) Regularly check whether the mechanical parts are loose.

4) The inspection must be carried out every 100 cycles. If the chain is in good condition, you can apply a little lubricating oil on the chain. If it is damaged, it must be replaced with the chain specified in the technical data. After replacement, it must be confirmed to be secure before use.

5) Check whether the upper and the lower limits are safe and reliable every 1000 cycles.

6) Check whether the lifting hook, the counterweight and the chain are in good condition every 600 cycles. It is required that the lifting hook is intact and the chain is not messy and enwound.

- **The chain is to be renewed at:**

- Reduction of the nominal thinkness at the points of contact by 10% or, if worn to the limit value in the table Fig.1.

- Elongation of a limb by 10% or of the chain over 11 limbs by 4% or, when stretched to the limit value in the table Fig.1.

- rigid-drawn chain links

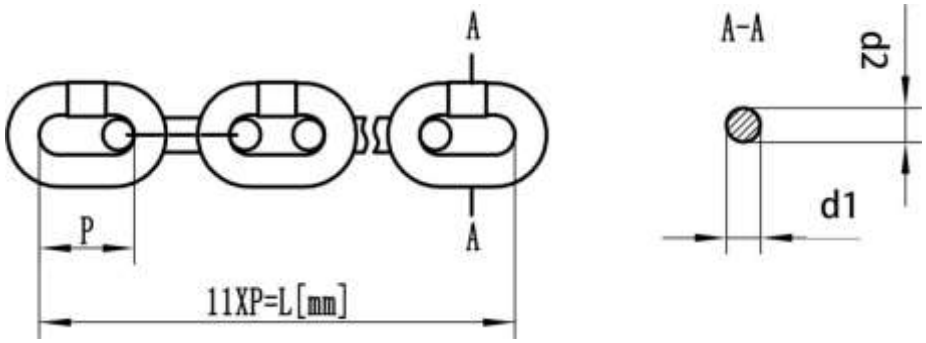
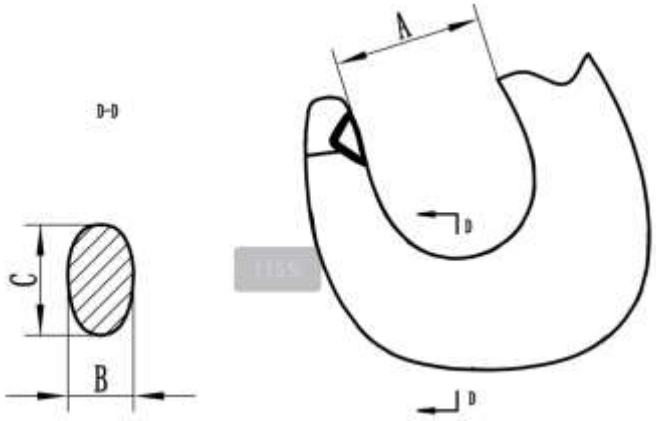


Fig 1：

	D=(d1+d2)/2 [mm]		L[mm]	
	Default	Limit	Default	Limit
0.25T	4.0	3.6	132	136.6
0.5T	5.0	4.5	165	170.8
1T Double Line	5.0	4.5	165	170.8

- **Wear measurement and renewal of the load hook**



	A*[mm]	B[mm]		C[mm]	
		Default	Limit	Default	Limit
0.25T	37.8	15	14.3	24	22.8
0.5T	37.8	15	14.3	24	22.8
1T Double Line	25.6	17.5	16.6	22.3	21.2

***Nominal Values. The concrete value must be measured by the new hook. The expension may not be more than 5% of the extent of the new condition.**

7) Before using the brushless DC electric chain hoist, check whether the E-stop switch and button on the control handle are in good working condition.

8) Check the braking system every 1000 cycles. If the motor makes abnormal noise or cannot increase the rated load, an overhaul may be needed for the braking system:

- Replace the damaged or worn parts, and keep the relevant maintenance documents in a safe place.

- For any unscheduled maintenance work, please contact the authorized service center.

8.3 Storage

Store the device and accessories out of children's reach, and keep them in a cool, dry place. The ideal storage temperature is between 5℃ and 30℃. Store the brushless DC electric chain hoist in its original packaging.

Storage of battery pack

Short-term storage: When the lithium battery is not used for a short period of time (such as within 6 months), and the battery pack is in a charged state when it is shipped from the original manufacturer, it shall be stored in a dry place with the temperature of 5℃-30℃ and the ambient humidity of less than 65%, free of non-corrosive gas. The temperature and humidity above or below the specifications will cause the metal parts of the battery to rust or the battery to leak.

Long-term storage: If the lithium battery is not used for a long time (such as more than 6 months), it shall be charged with 50% to 80% of the battery capacity, and it shall be taken out from the brushless DC electric chain hoist to be stored in a dry and cool environment. The battery pack shall be charged every 3 months to prevent the battery pack from being too low in battery due to self-discharge after excessively long time of storage, thus resulting in irreversible capacity loss.

The self-discharge of the lithium battery is affected by ambient temperature and humidity. High temperature and damp heat will accelerate the self-discharge of the battery. It is recommended to store the battery in a dry environment with the temperature of 5℃-30℃ and the ambient humidity of less than 65%.

8.4 Disposal and recycling

The device is supplied with packaging to protect it from damage during transportation. This packaging adopts raw material and therefore can be reused or returned to the raw material system. The unit and its accessories are made from various types of materials, such as metal, plastics and battery packs.

Defective parts must be disposed of as special waste. Ask your dealer or your local council.

Weeee

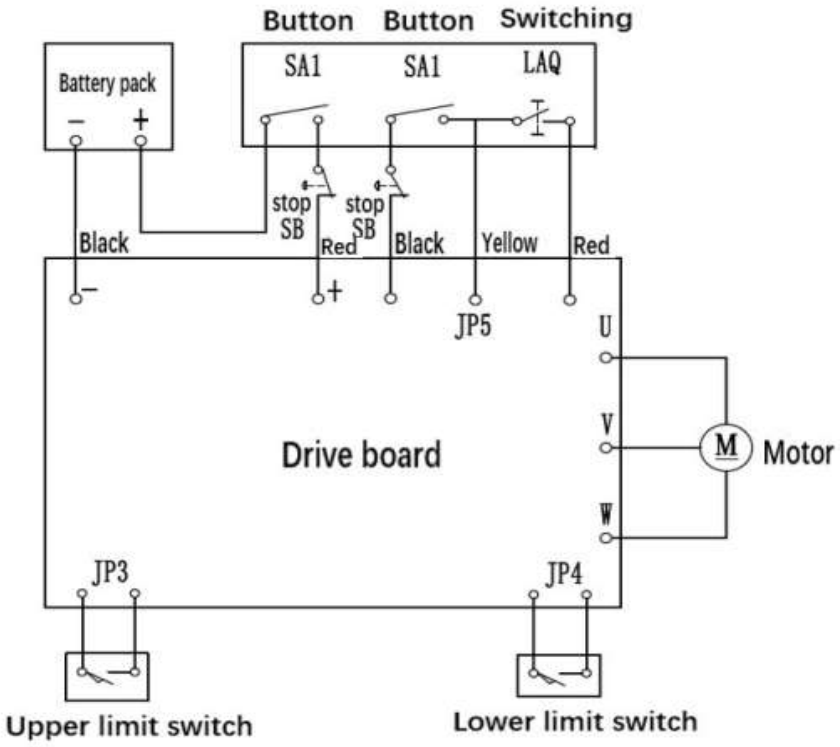
This symbol points out that this product should not be disposed of in accordance with the directive via electrical and electronics (2012/19/EU) and national laws. The improper handling of old devices can have negative effects on the environment and human health due to potentially dangerous substances that are often contained in electronics and electronics. Consumers are legally obliged to provide electrical and electronic devices at the end of their lifespan of a decline in settlement separated by unsorted settlement. By properly disposing of this product, you also contribute to effective use of natural resources. You can obtain information on collection points for old devices

from your city administration, the public disposal institution, an authorized body for the disposal of electrical and electronics equipment or your garbage disposal.

This product must be submitted to a collection point provided. This can z. B. by returning when buying a similar product or by handing over to an authorized collection point for the reprocessing of electrical and electronics old devices. The delivery of old devices is free of charge.

Before disposing of the product, all batteries and batteries as well as all lamps that can be removed without destruction can be found.

We would like to point out that you are responsible for the deletion of personal data on the product to be disposed of.



Electrical Schematic Diagram

Packing List

Brushless DC electric chain hoist (complete set)	**1 set**
Operating manual	**1 copy**
Outer package of air blowing plastic case (optional)	**1 piece**
Battery pack and charger (optional)	**1 set**

GUARANTEE CERTIFICATE

Dear Customer,

All of our products undergo strict quality checks to ensure that they reach you in perfect condition. In the unlikely event that your device develops a fault, please contact our service department at the address shown on this guarantee card. Of course, if you would prefer to call us then we are also happy to offer our assistance under the service number printed below. Please note the following terms under which guarantee claims can be made:

1. These guarantee terms cover additional guarantee rights and do not affect your statutory warranty rights. We do not charge you for this guarantee.

2. Our guarantee only covers problems caused by material or manufacturing defects, and it is restricted to the rectification of these defects or replacement of the device. Please note that our devices have not been designed for use in commercial, trade or industrial applications. Consequently, the guarantee is invalidated if the equipment is used in commercial, trade or industrial applications or for other equivalent activities. The following are also excluded from our guarantee: compensation for transport damage, damage caused by failure to comply with the installation/assembly instructions or damage caused by unprofessional installation, failure to comply with the operating instructions (e.g. connection to the wrong mains voltage or current type), misuse or inappropriate use (such as overloading of the device or use of non-approved tools or accessories), failure to comply with the maintenance and safety regulations, ingress of foreign bodies into the device (e.g. sand, stones or dust), effects of force or external influences (e.g. damage caused by the device being dropped) and normal wear resulting from proper operation of the device. This applies in particular to rechargeable batteries for which we nevertheless issue a guarantee period of 12 months.

The guarantee is rendered null and void if any attempt is made to tamper with the device.

3. The guarantee is valid for a period of 2 years starting from the purchase date of the device. Guarantee claims should be submitted before the end of the guarantee period within two weeks of the defect being noticed. No guarantee claims will be accepted after the end of the guarantee period. The original guarantee period remains applicable to the device even if repairs are carried out or parts are replaced. In such cases, the work performed or parts fitted will not result in an extension of the guarantee period, and no new guarantee will become active for the work performed or parts fitted. This also applies when an on-site service is used.

4. In order to assert your guarantee claim, please send your defective device postage-free to the address shown below. Please enclose either the original or a copy of your sales receipt or another dated proof of purchase. Please keep your sales receipt in a safe place, as it is your proof of purchase. It would help us if you could describe the nature of the problem in as much detail as possible. If the defect is covered by our guarantee then your device will either be repaired immediately and returned to you, or we will send you a new device.

Of course, we are also happy offer a chargeable repair service for any defects which are not covered by the scope of this guarantee or for units which are no longer covered. To take advantage of this service, please send the device to our service address.